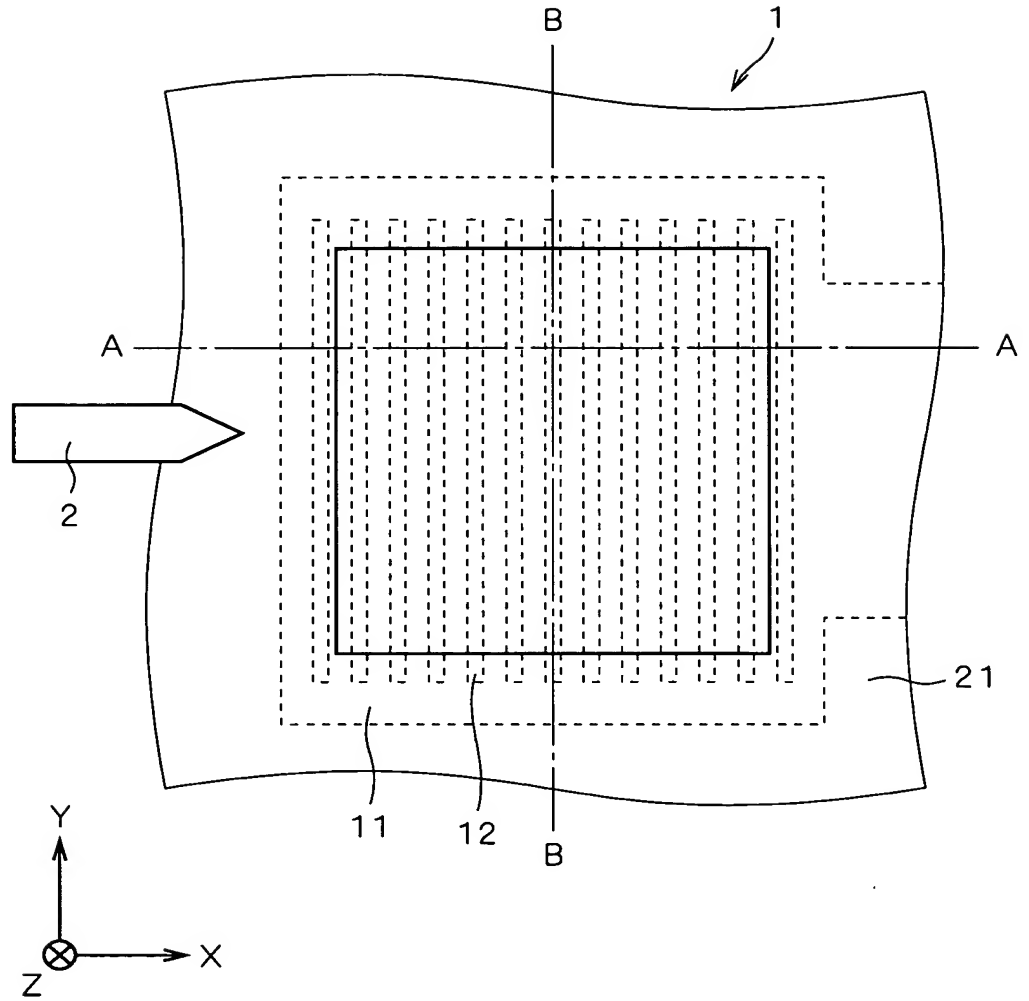
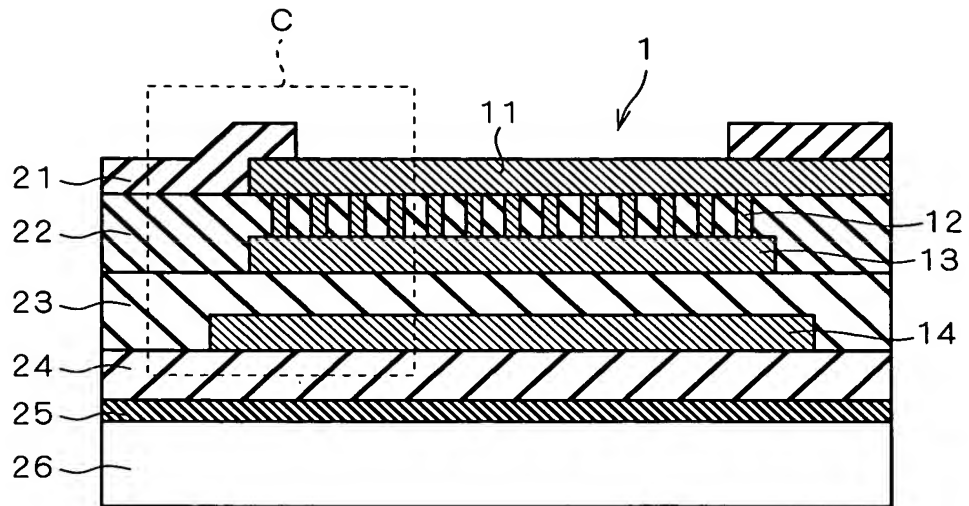


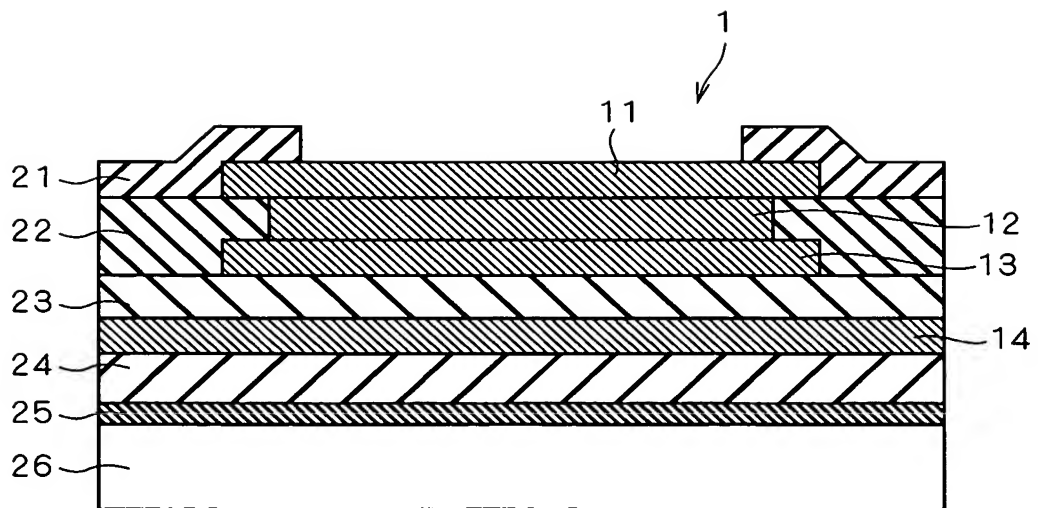
F I G . 1



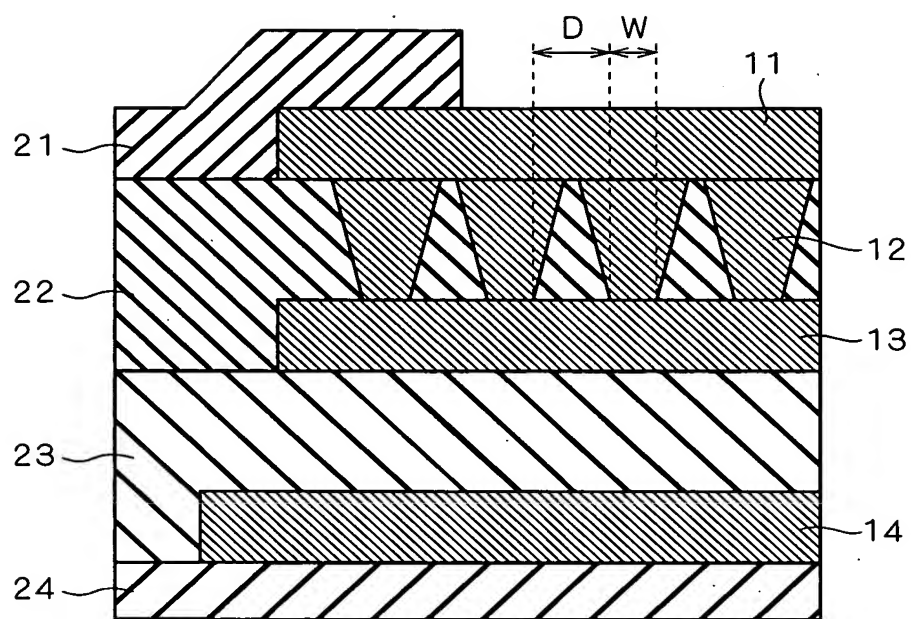
F I G . 2



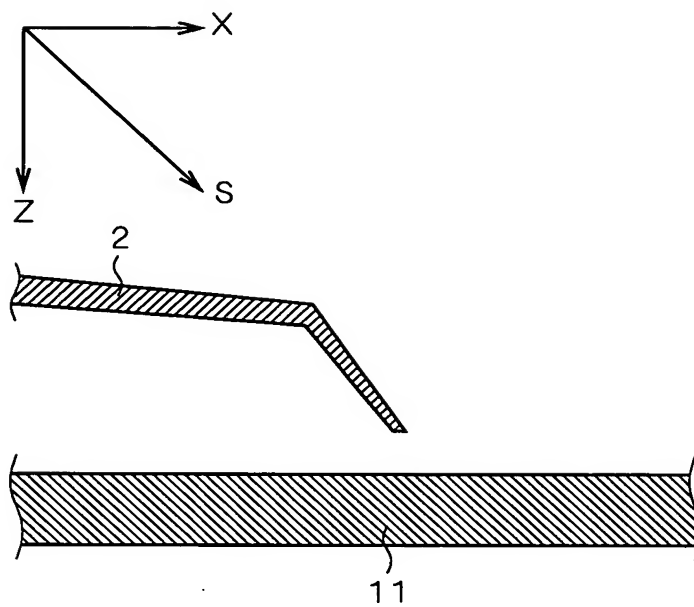
F I G . 3



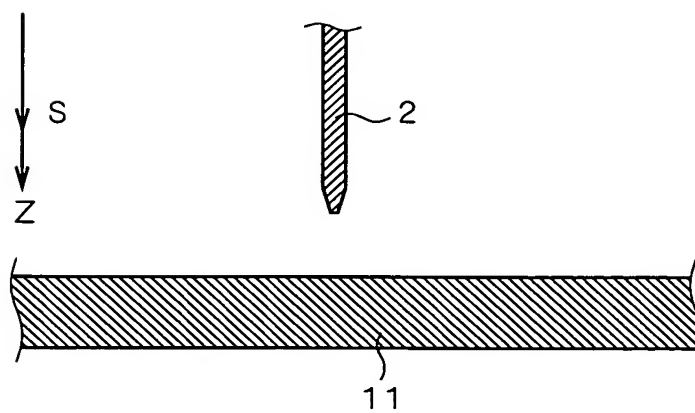
F I G . 4



F I G . 5 A



F I G . 5 B



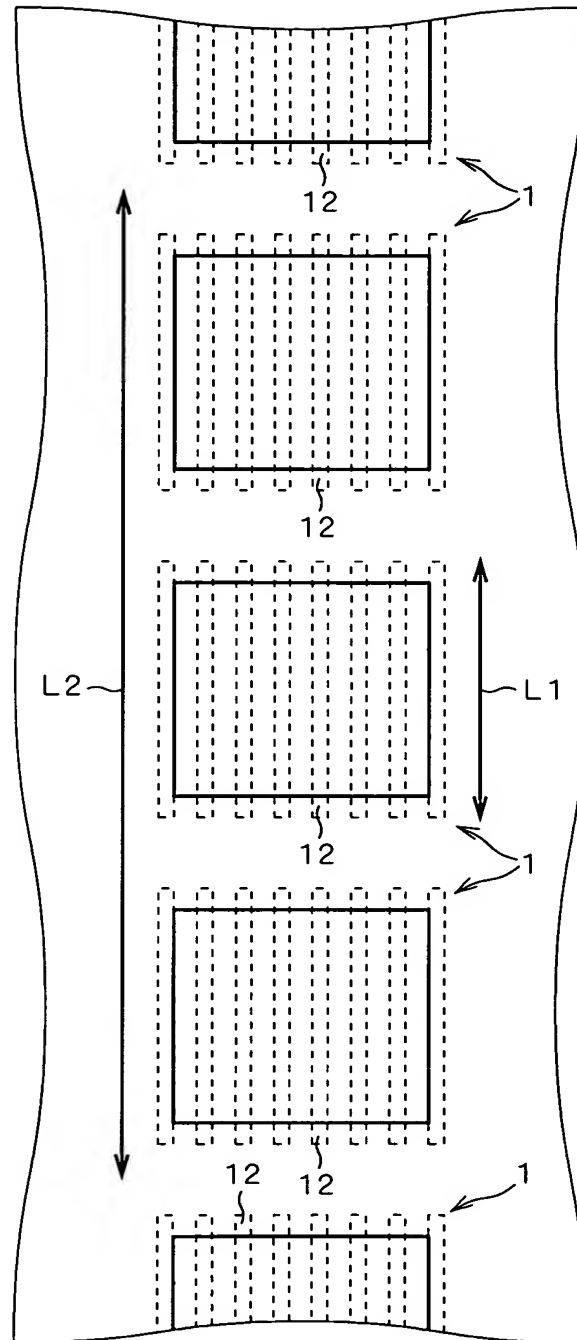
F I G . 6

		AMOUNT OF OD ( $\mu\text{m}$ )	NUMBER OF TIMES OF PROBING			
			ONCE	5 TIMES	7 TIMES	10 TIMES
1	CONVENTIONAL STRUCTURE (LARGE CALIBER VIA HOLE)	50	○	○	○	○
		80	○	○	○	×
		100	○	○	×	×
2	EMBODIMENT 1 (CONTACTING AT RIGHT ANGLE TO SECOND METAL)	50	○	○	○	○
		80	○	○	○	×
		100	○	○	×	×
3	EMBODIMENT 1 (CONTACTING IN PARALLEL WITH SECOND METAL)	50	○	○	○	×
		80	○	○	×	×
		100	○	×	×	×
4	EMBODIMENT 2 (STRESS SIMULATION)	50	○	○	○	○
		80	○	○	○	×
		100	○	○	○	×
5	EMBODIMENT 4 (COMBINATION STRUCTURE WITH EMBODIMENT 1)	50	○	○	○	○
		80	○	○	○	○
		100	○	○	○	○

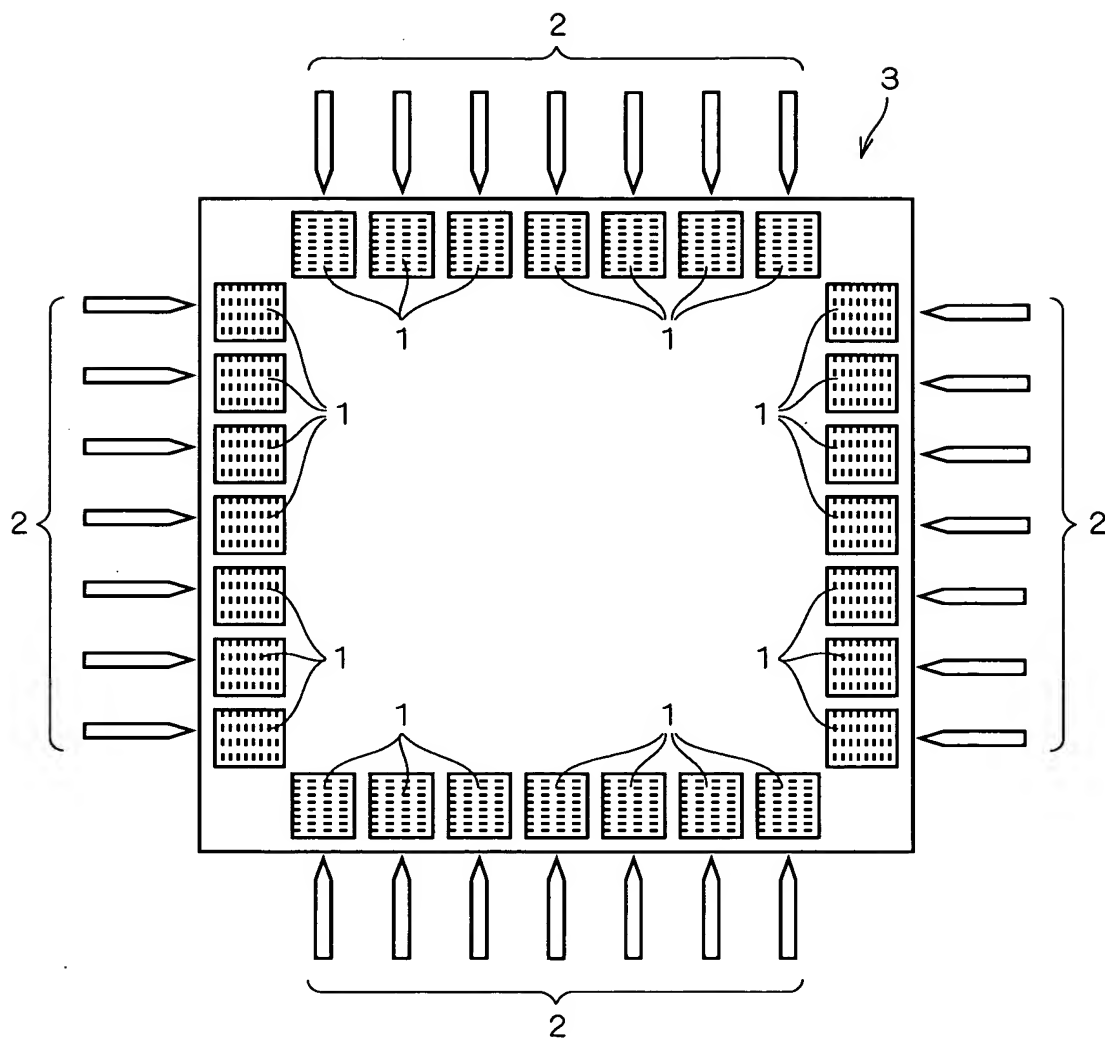
○ : NO CRACK

× : CRACK GENERATION

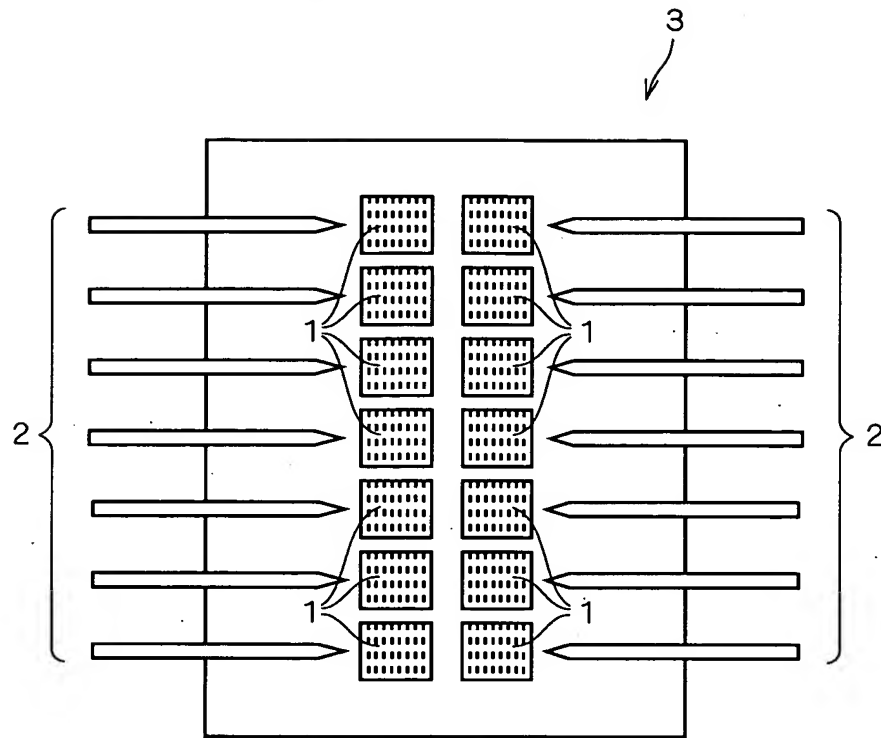
F I G . 7



F I G . 8

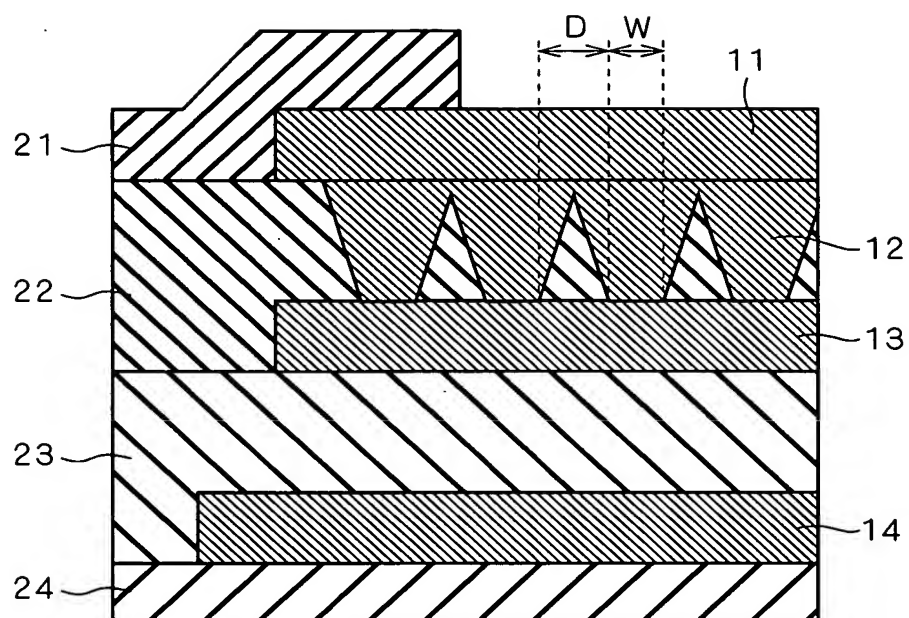


F I G . 9

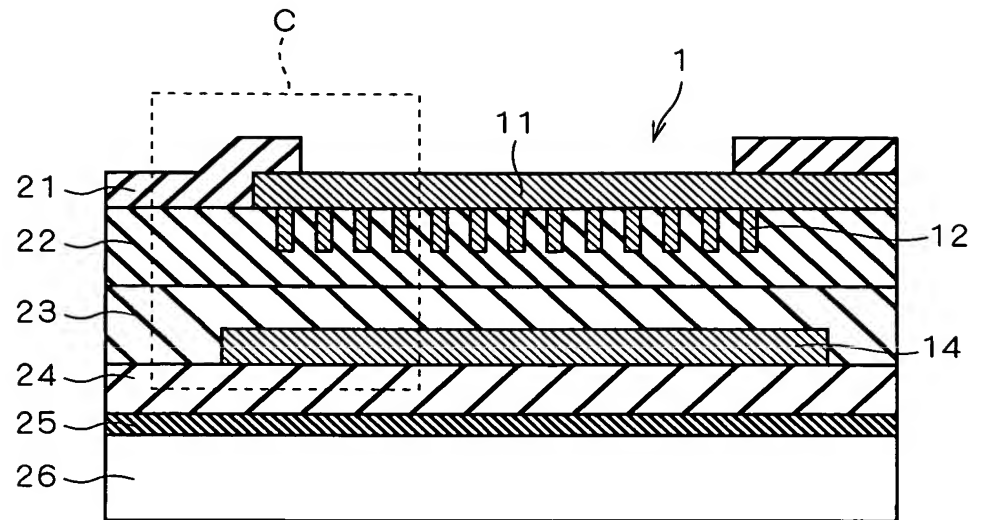




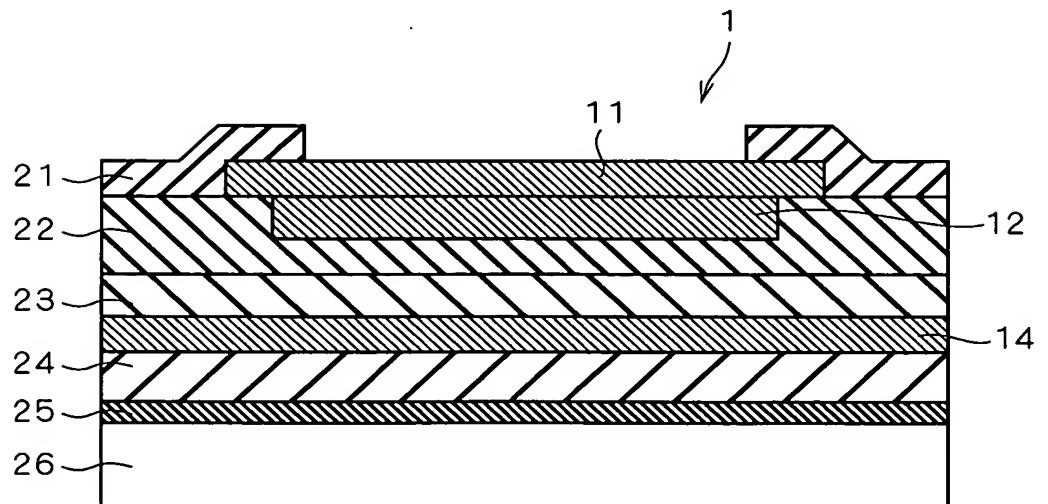
F I G . 1 0



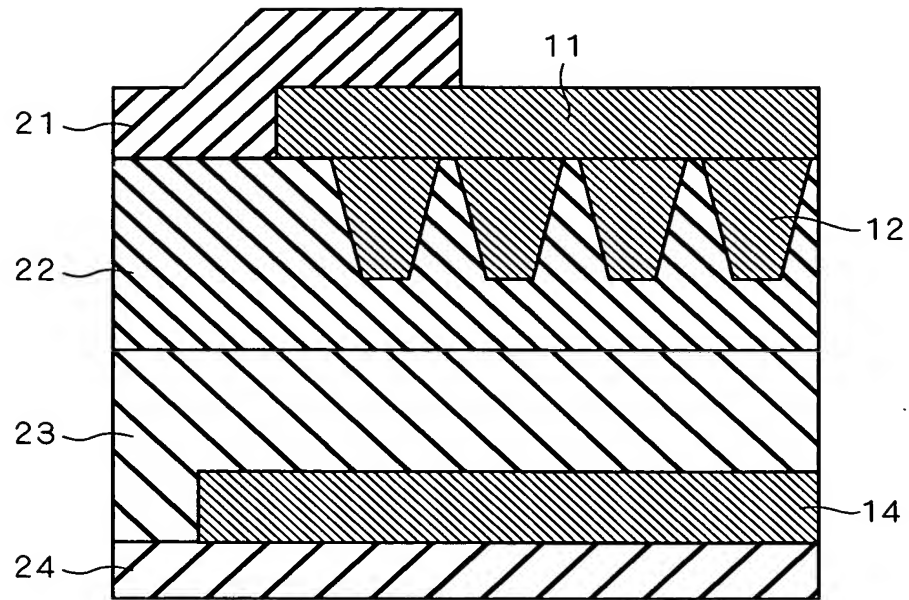
F I G . 1 1



F I G . 1 2



F I G . 1 3



F I G . 1 4

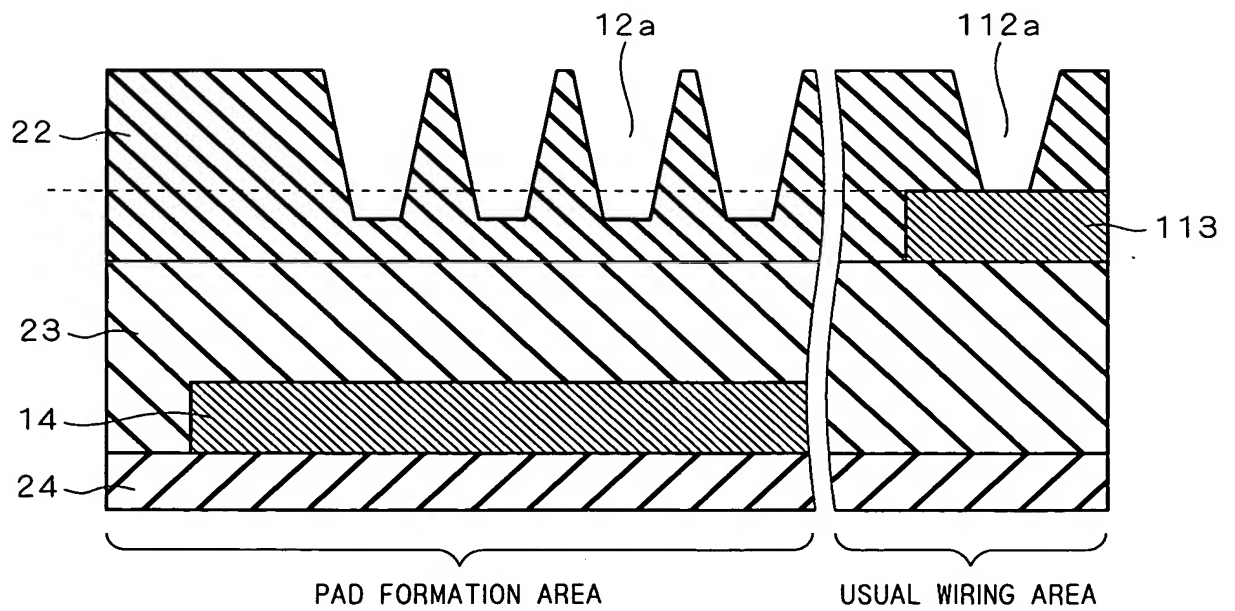




FIG. 17

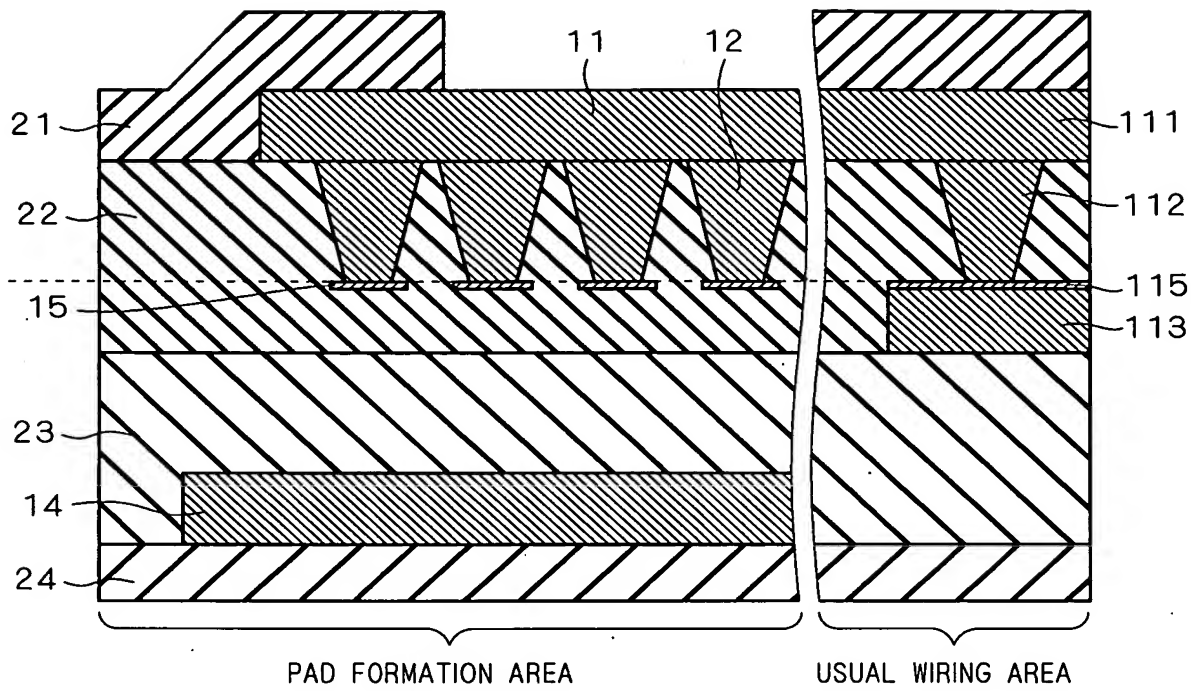
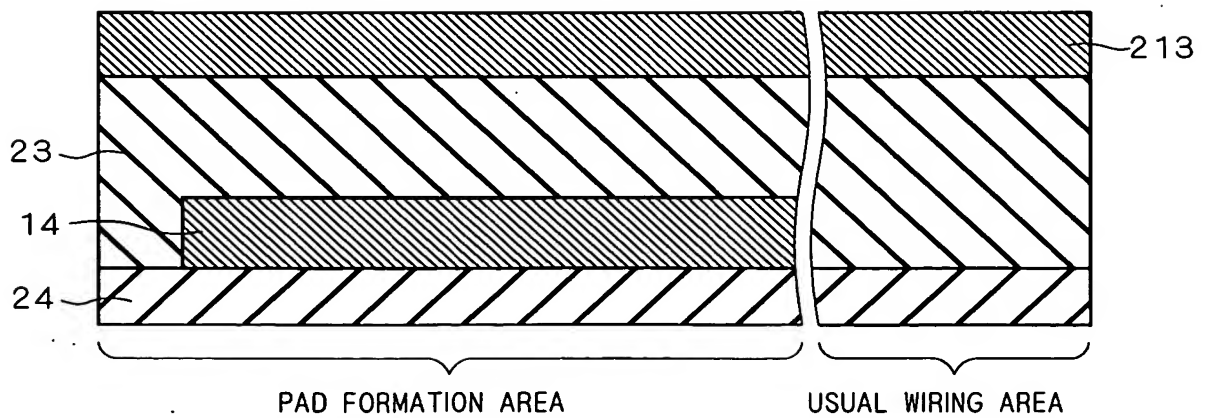
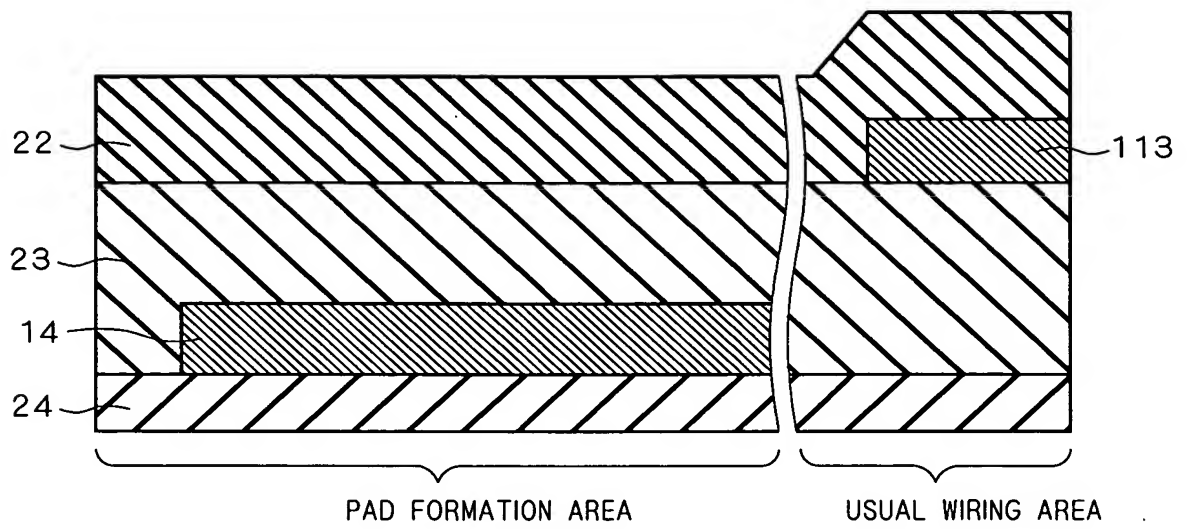


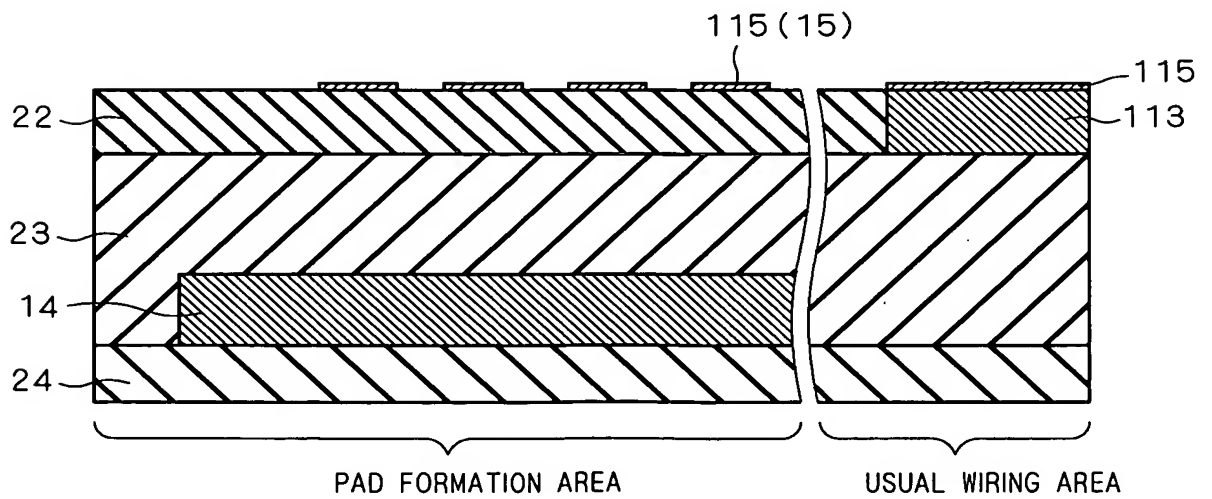
FIG. 18



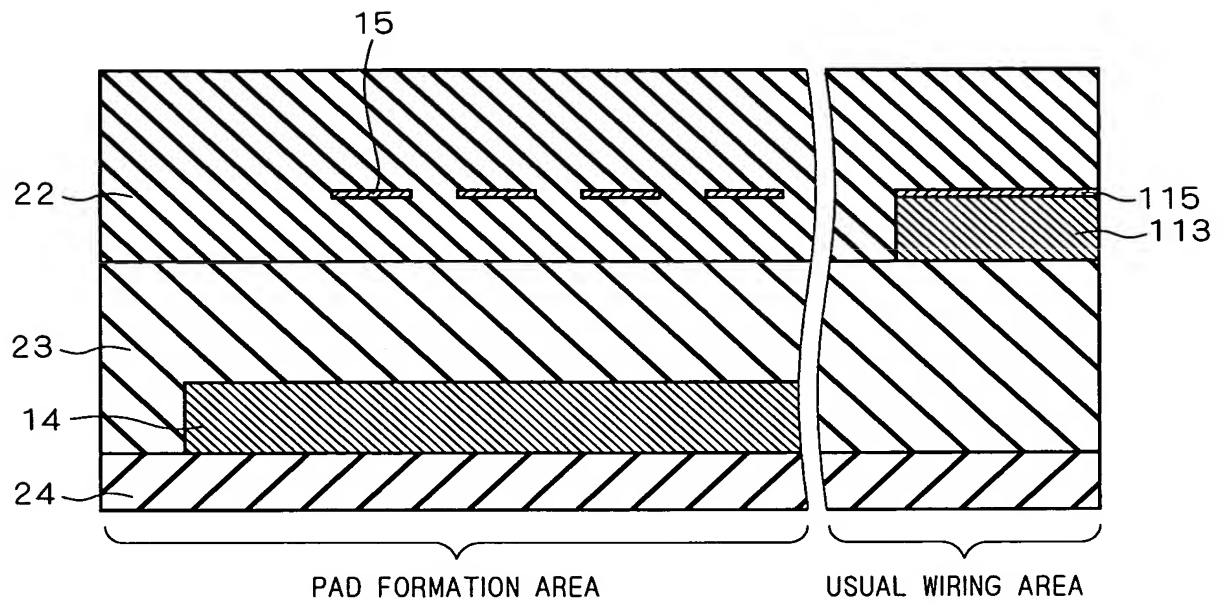
F I G . 1 9



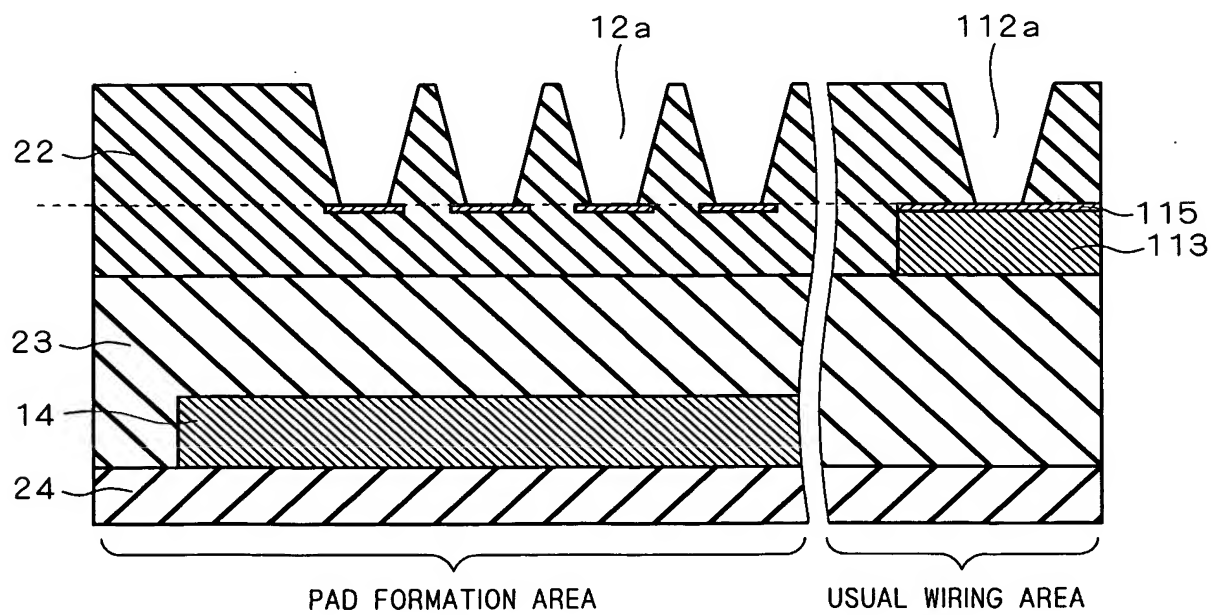
F I G . 2 0



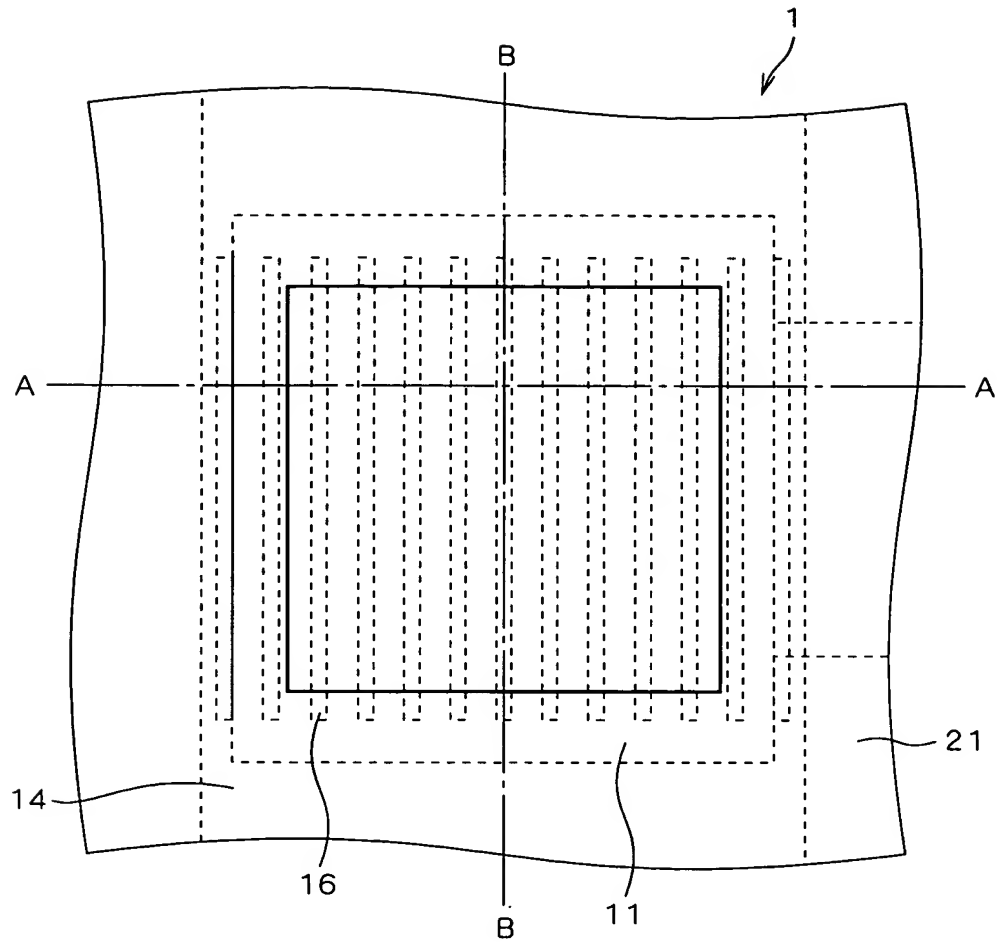
F I G . 2 1



F I G . 2 2

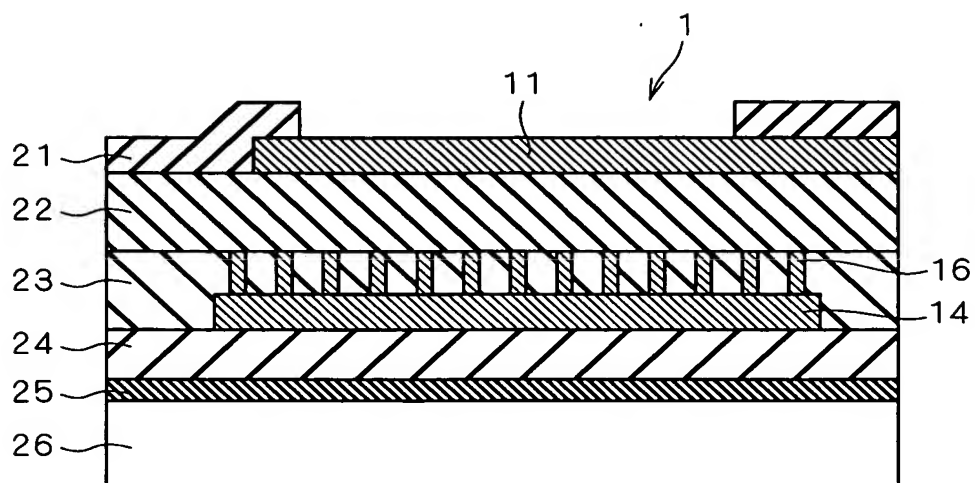


F I G . 2 3

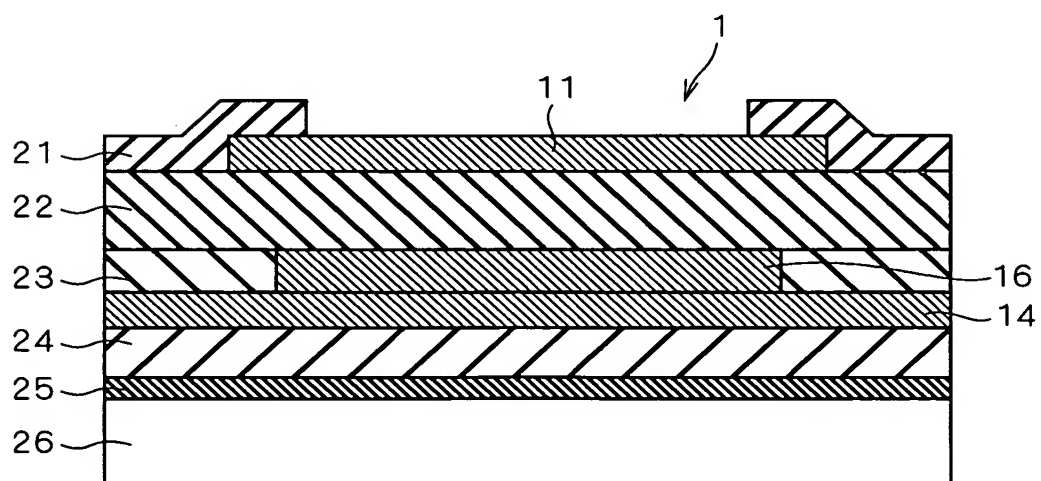




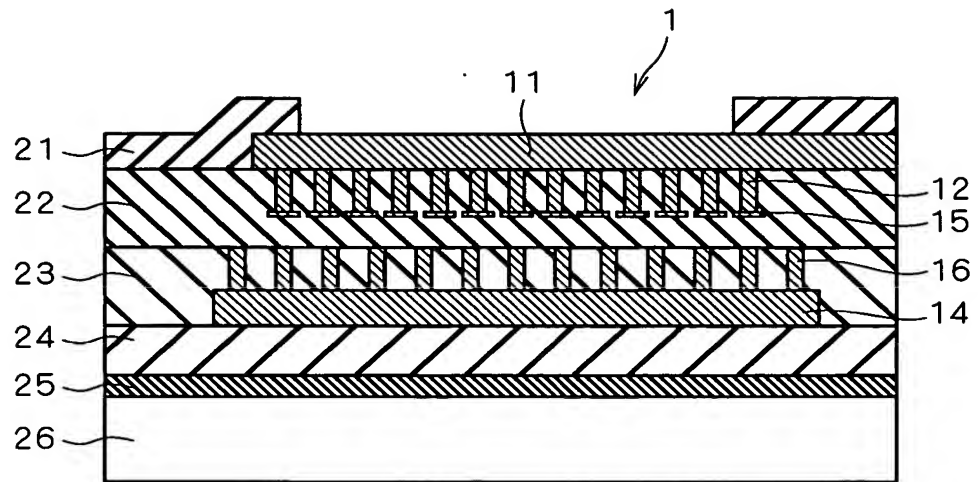
F I G . 2 4



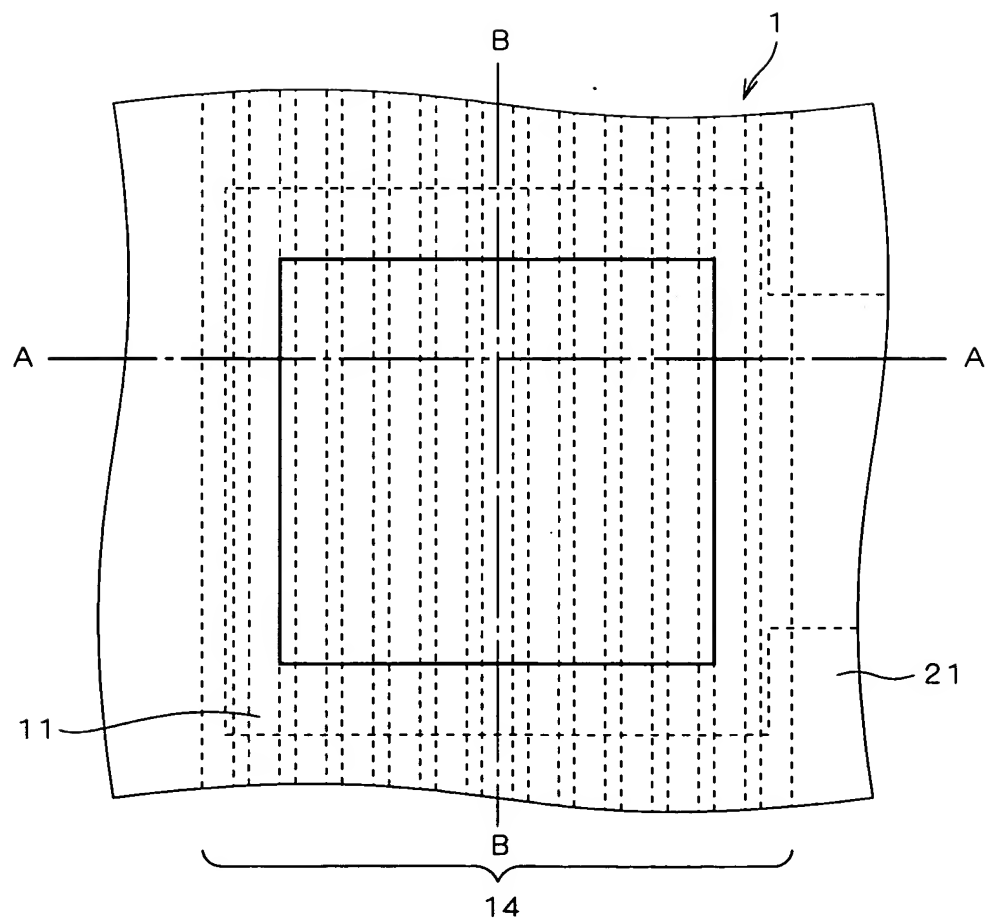
F I G . 2 5



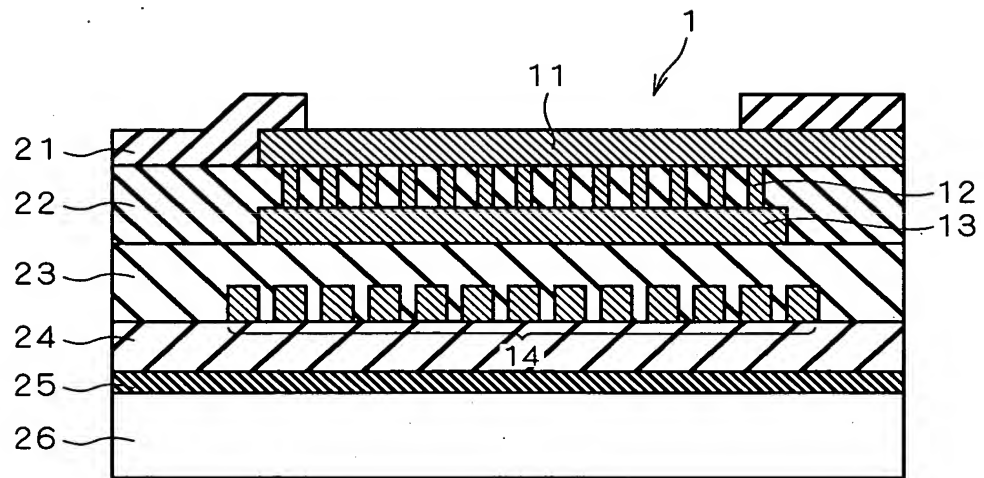
F I G . 2 6



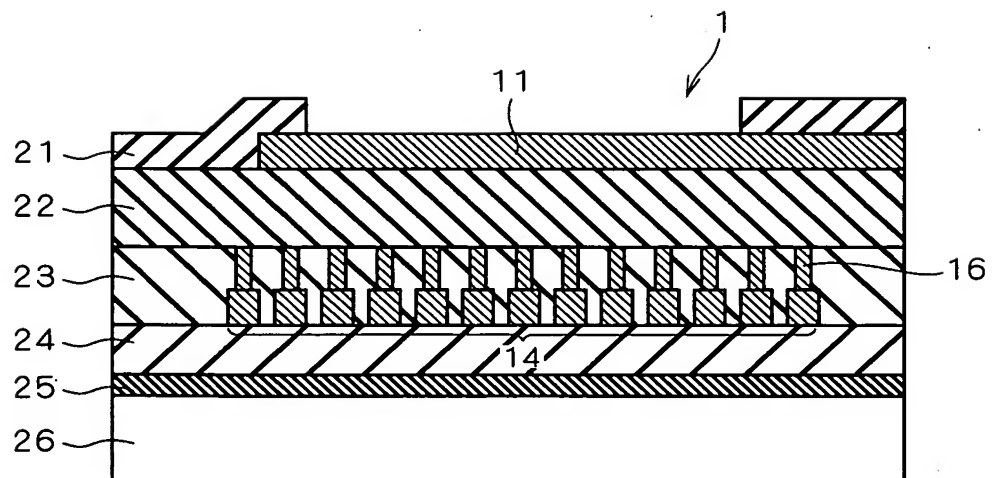
F I G . 2 7



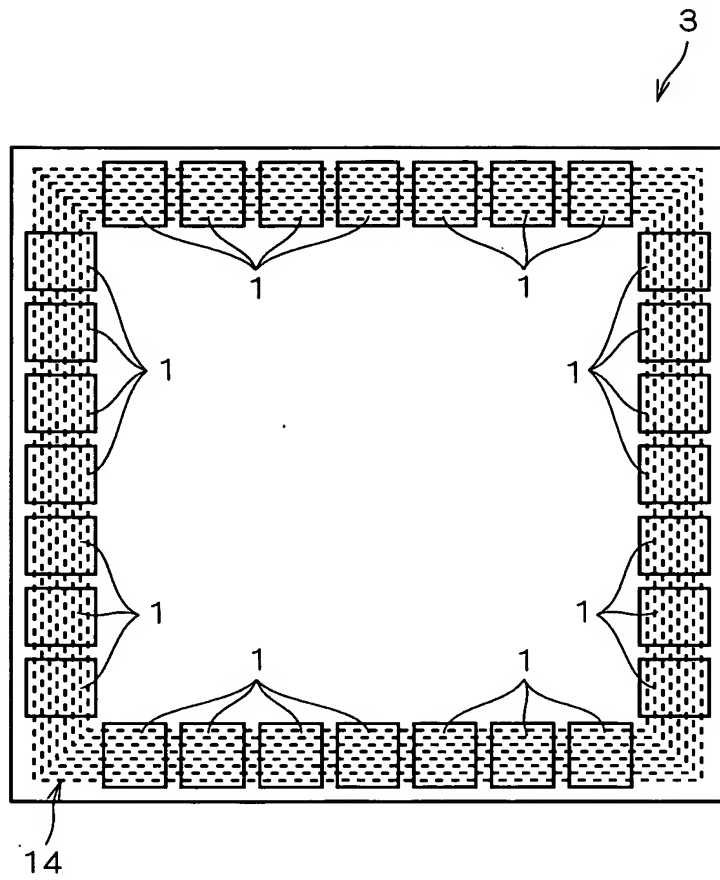
F I G . 2 8



F I G . 2 9



F I G . 3 0



F I G . 3 1

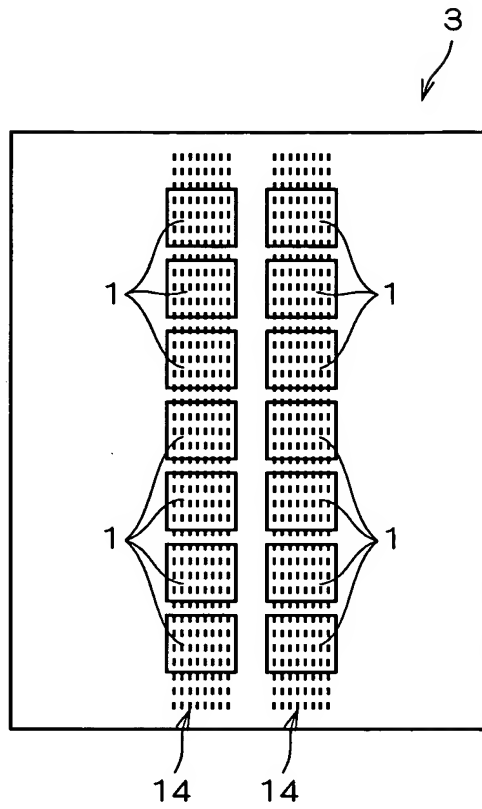


FIG. 32

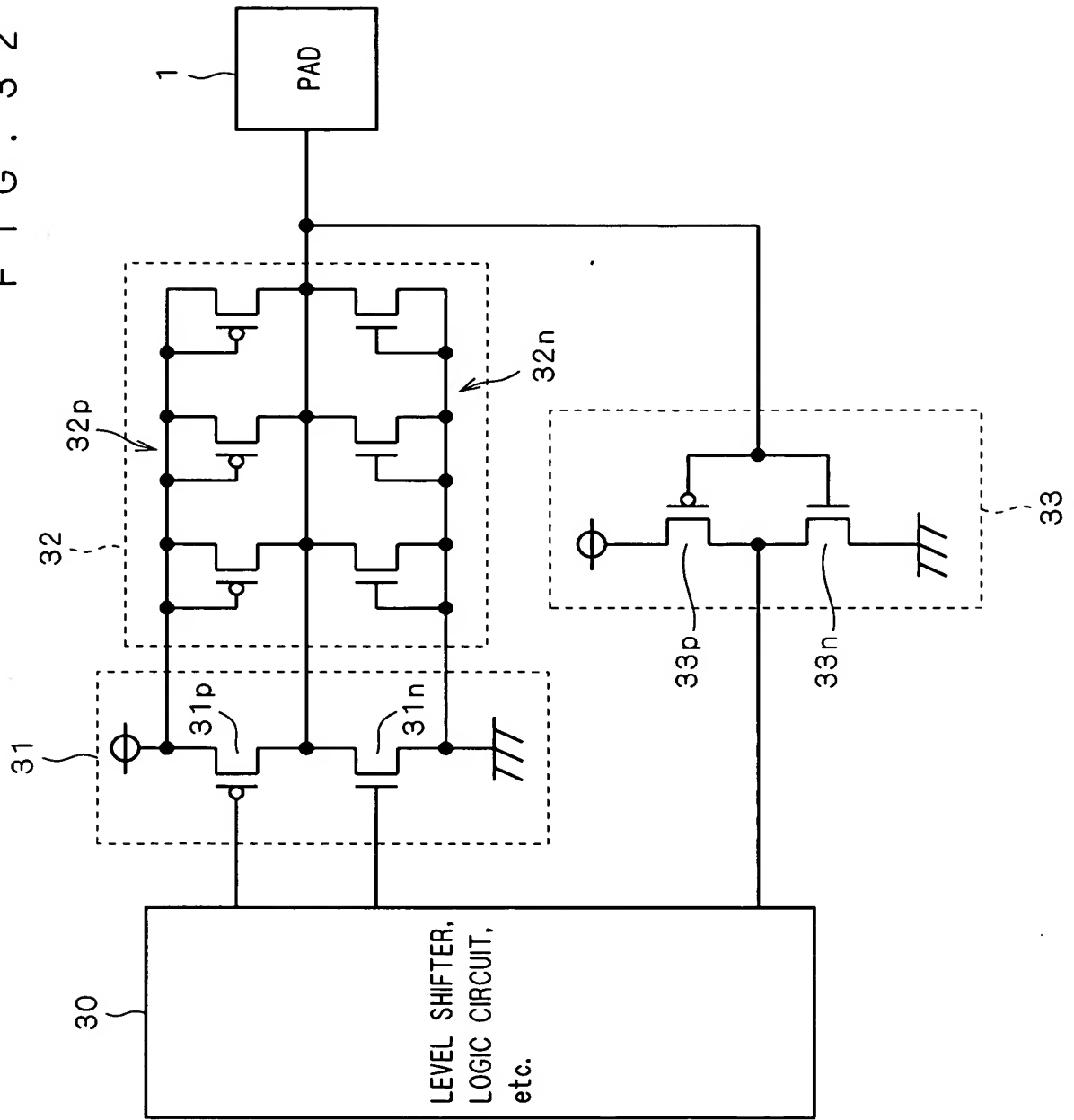


FIG. 33

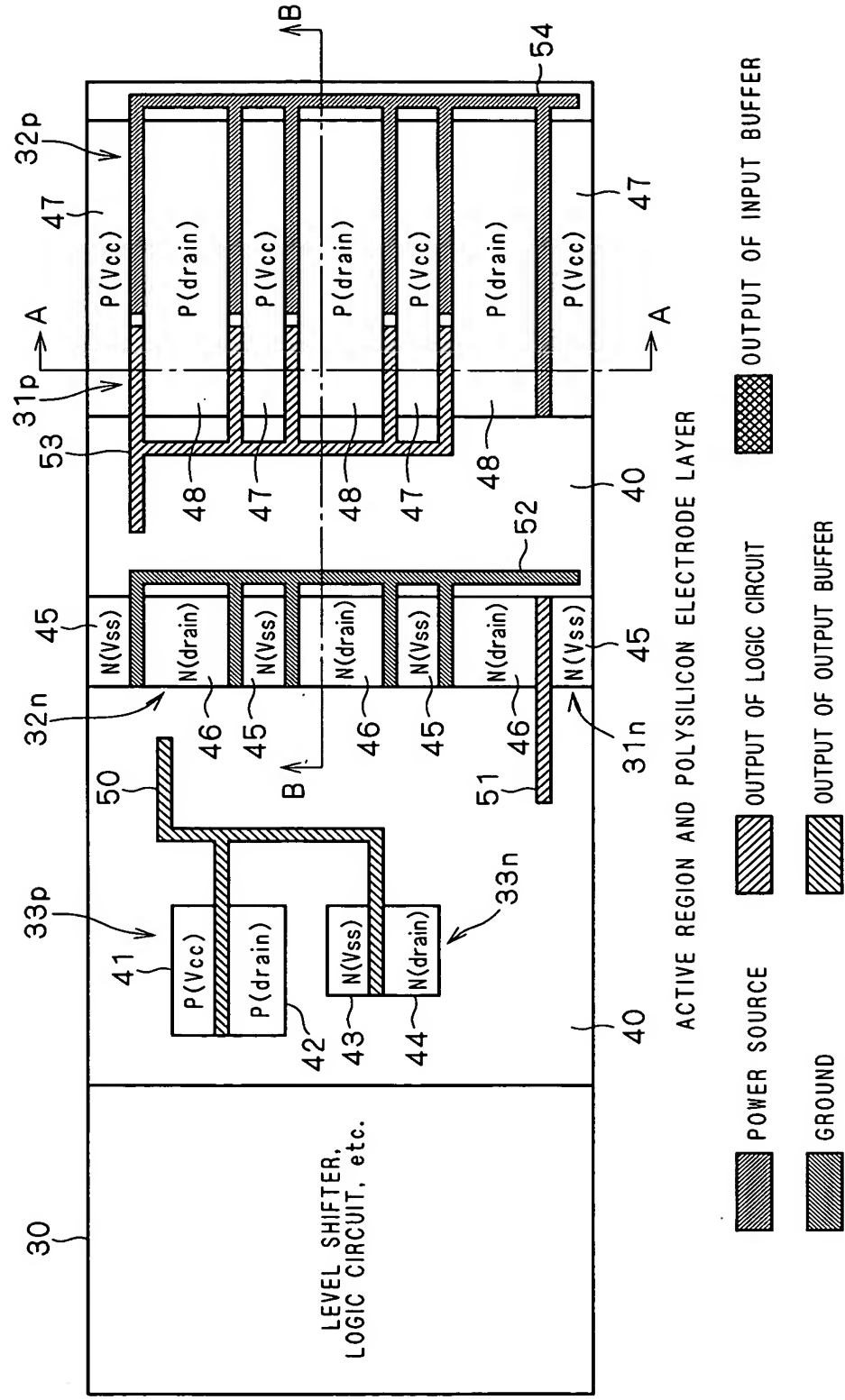


FIG. 34

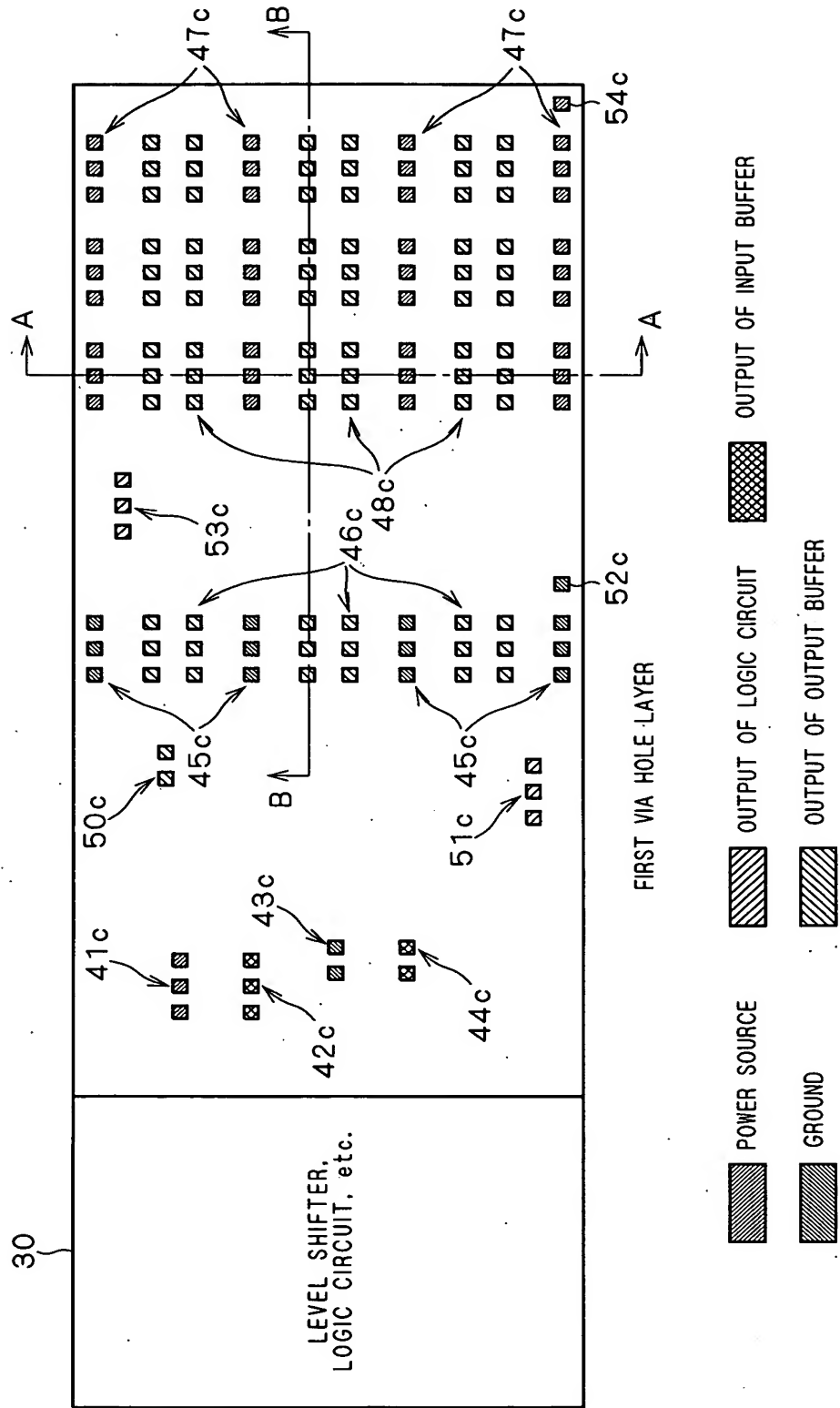




FIG. 35

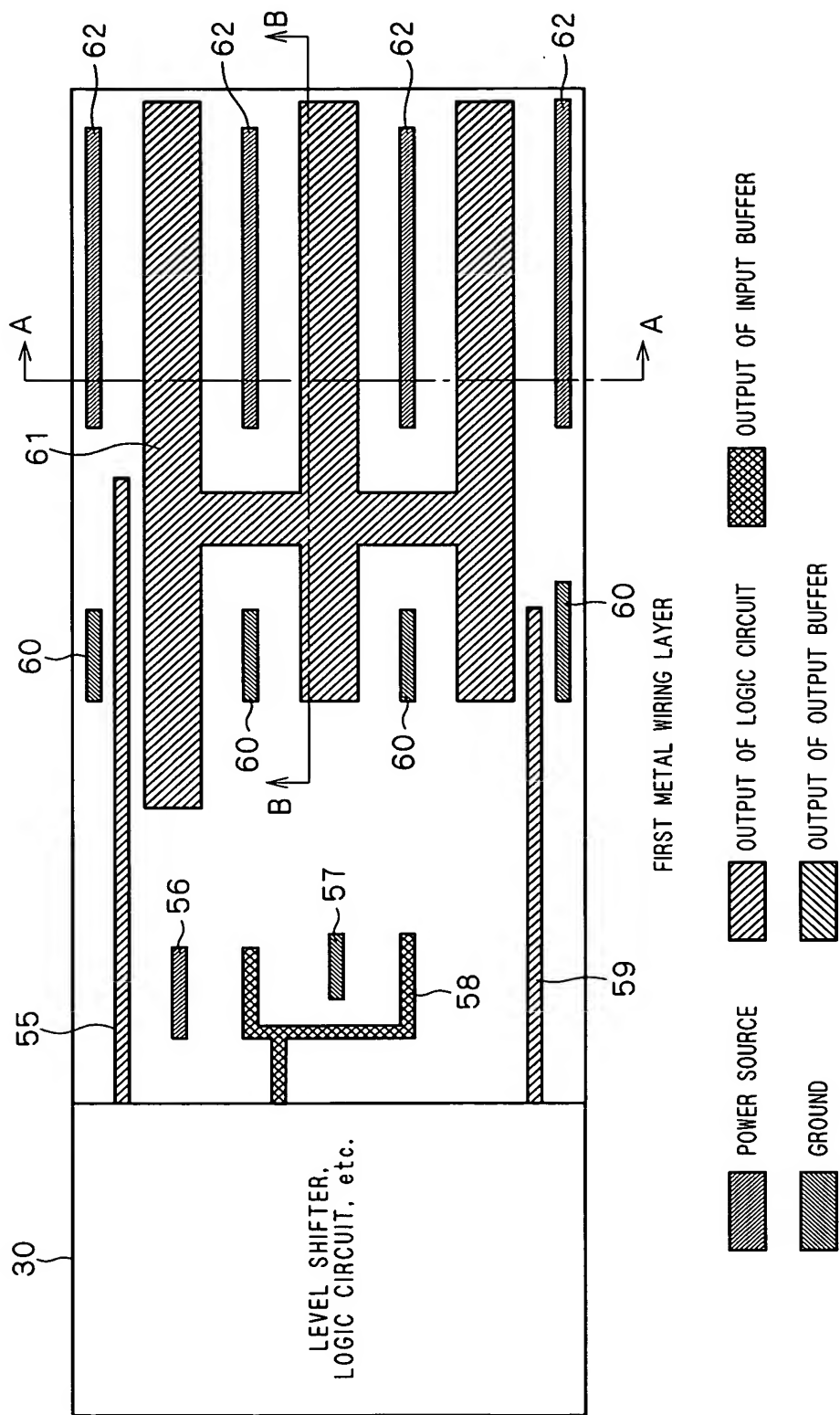


FIG. 36

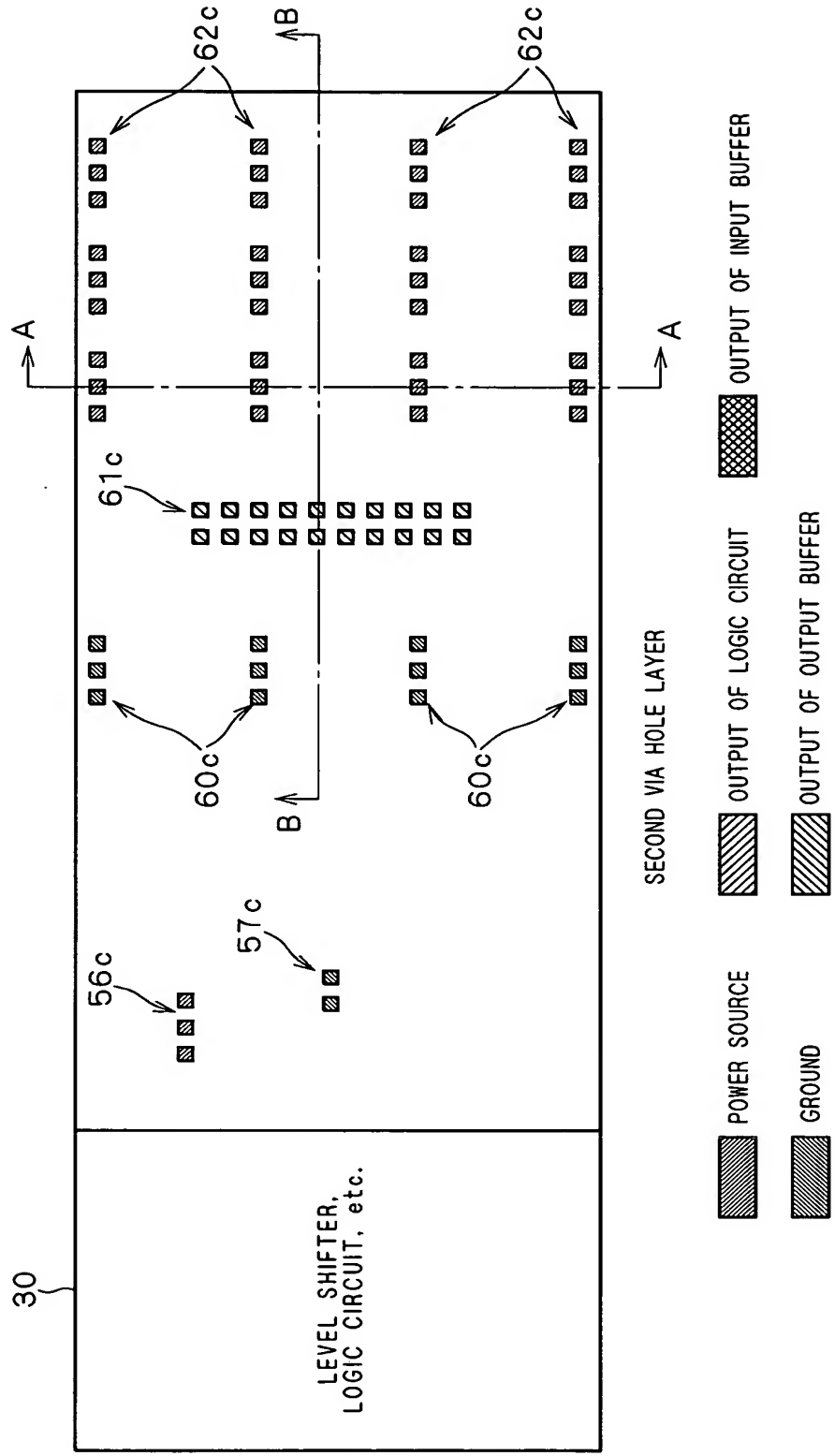
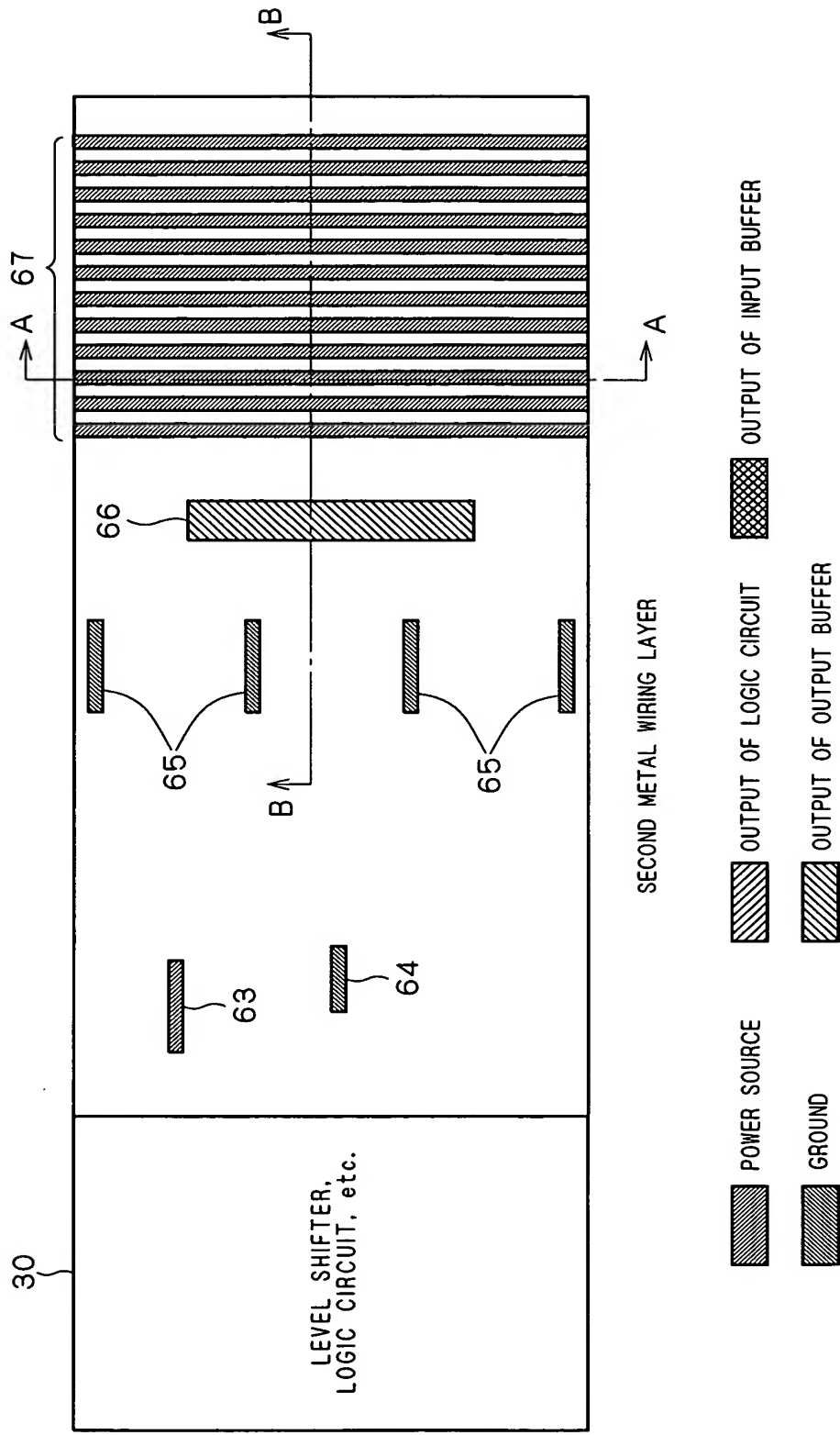


FIG. 37



F I G . 3 8

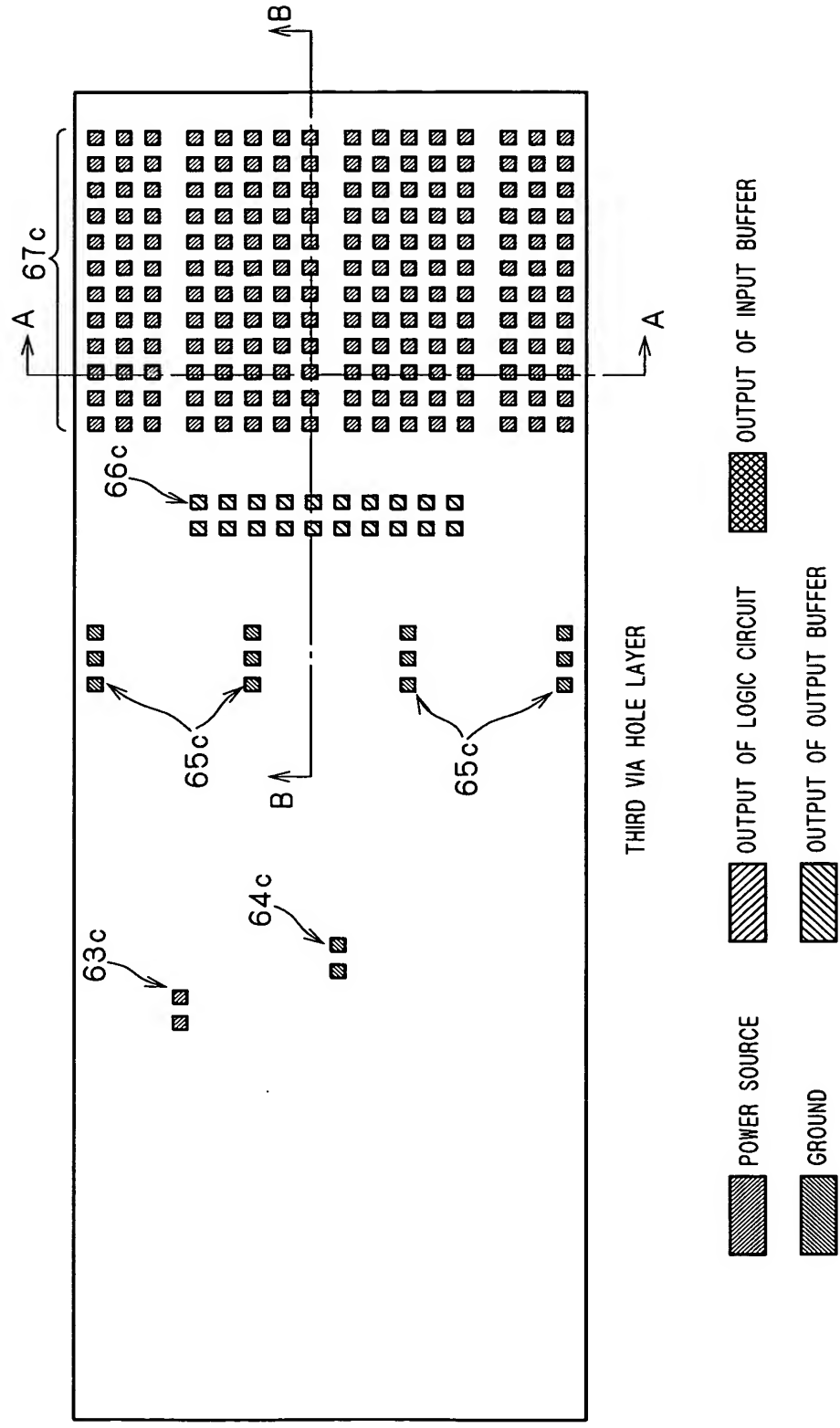


FIG. 39

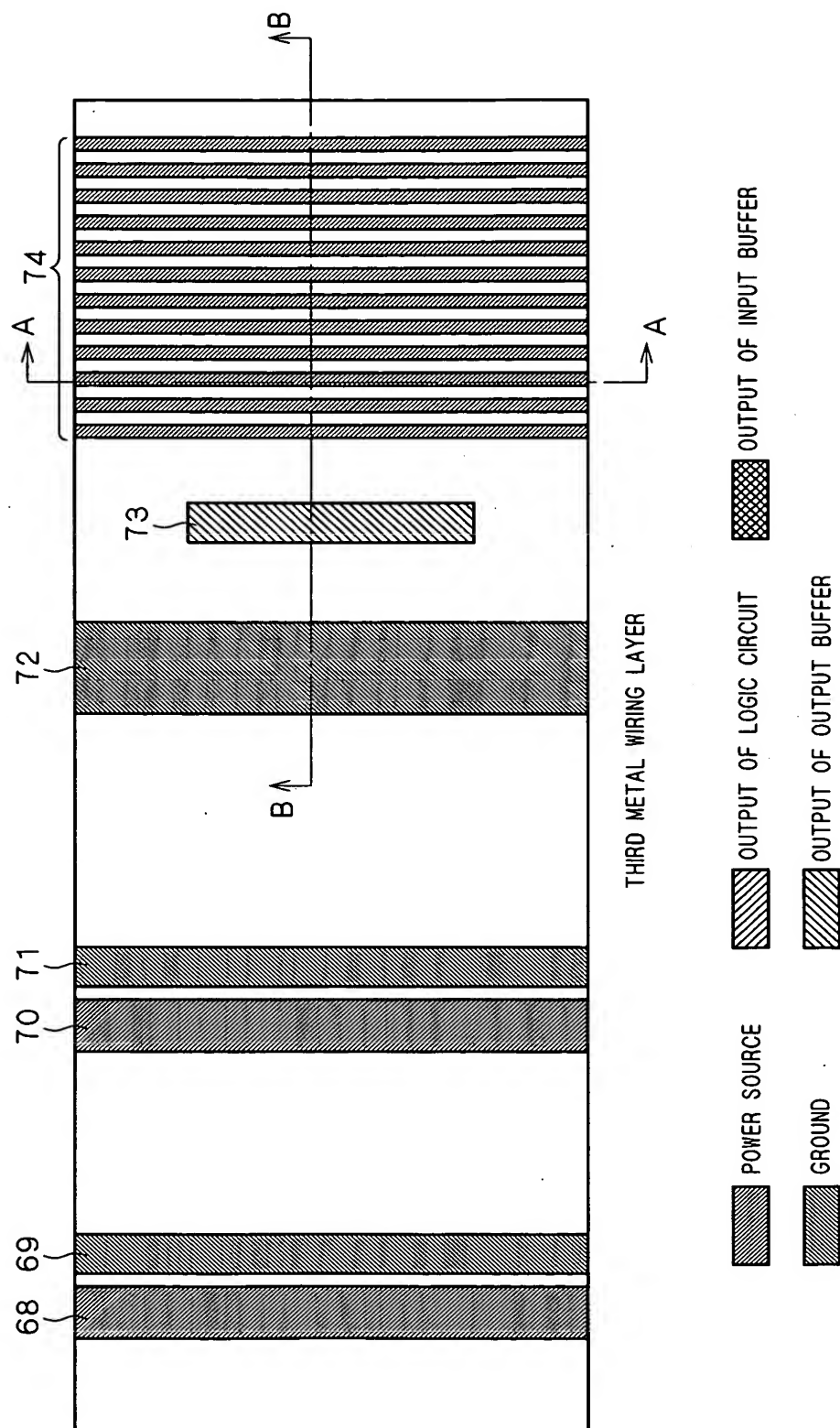


FIG. 40

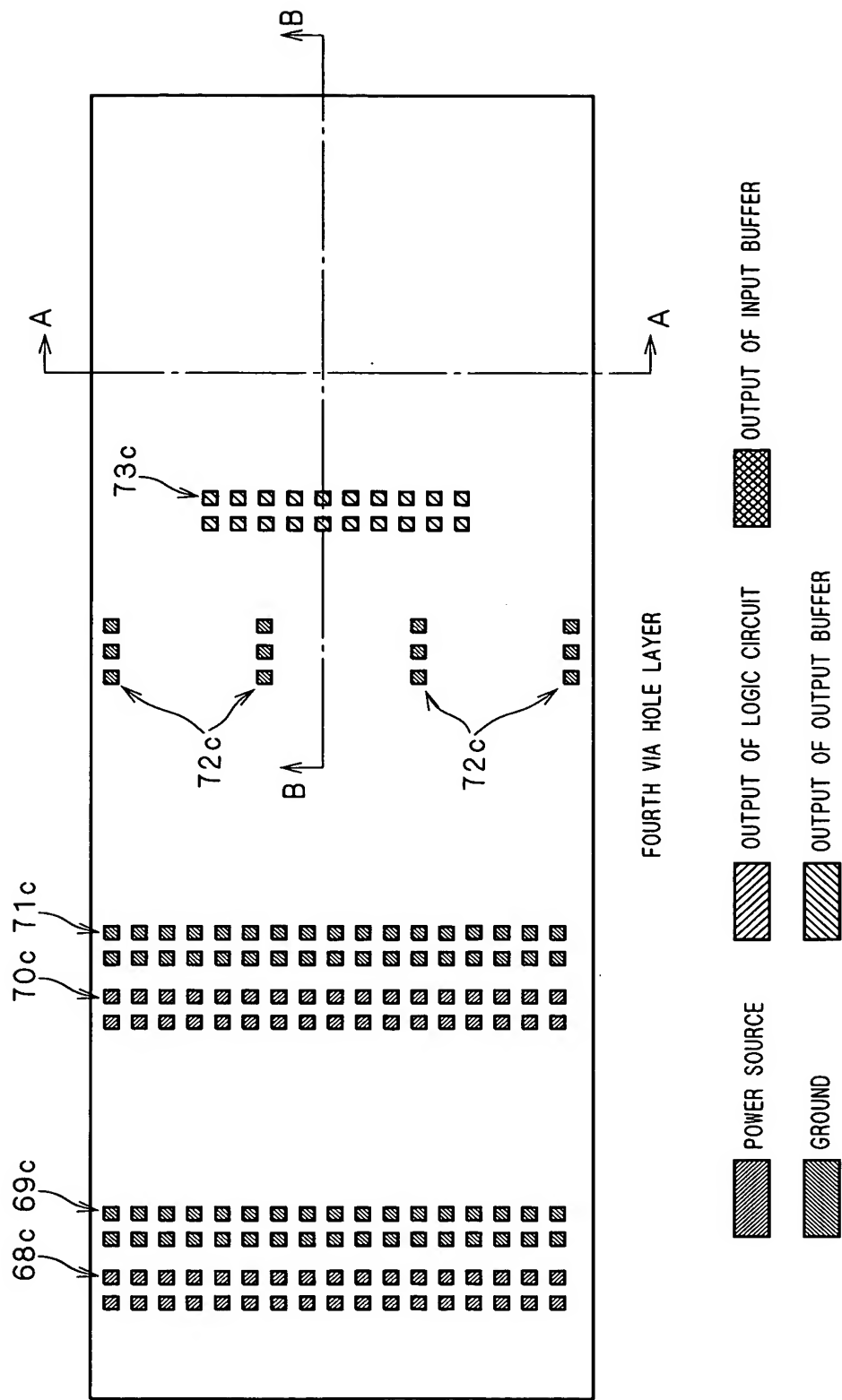


FIG. 41

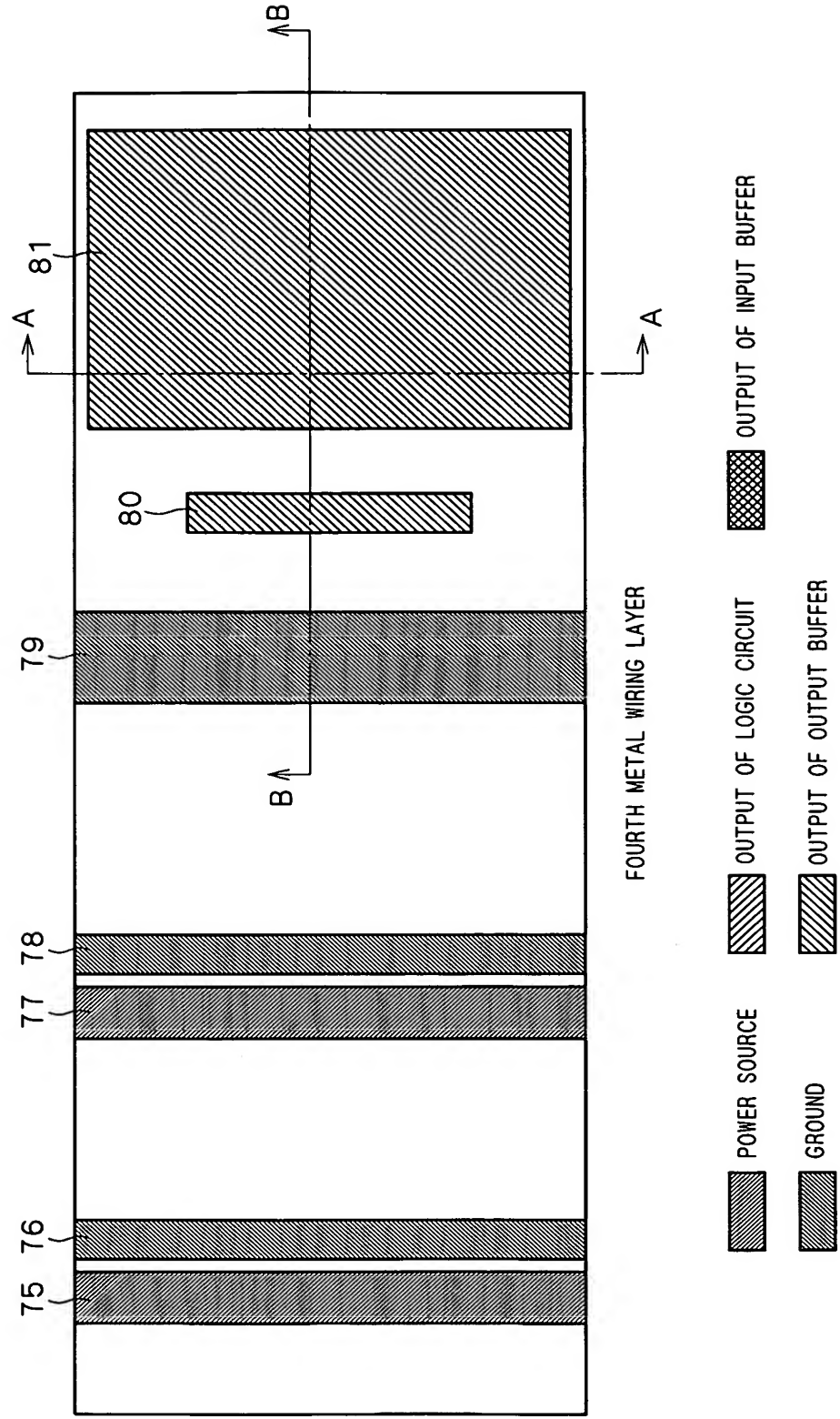


FIG. 42

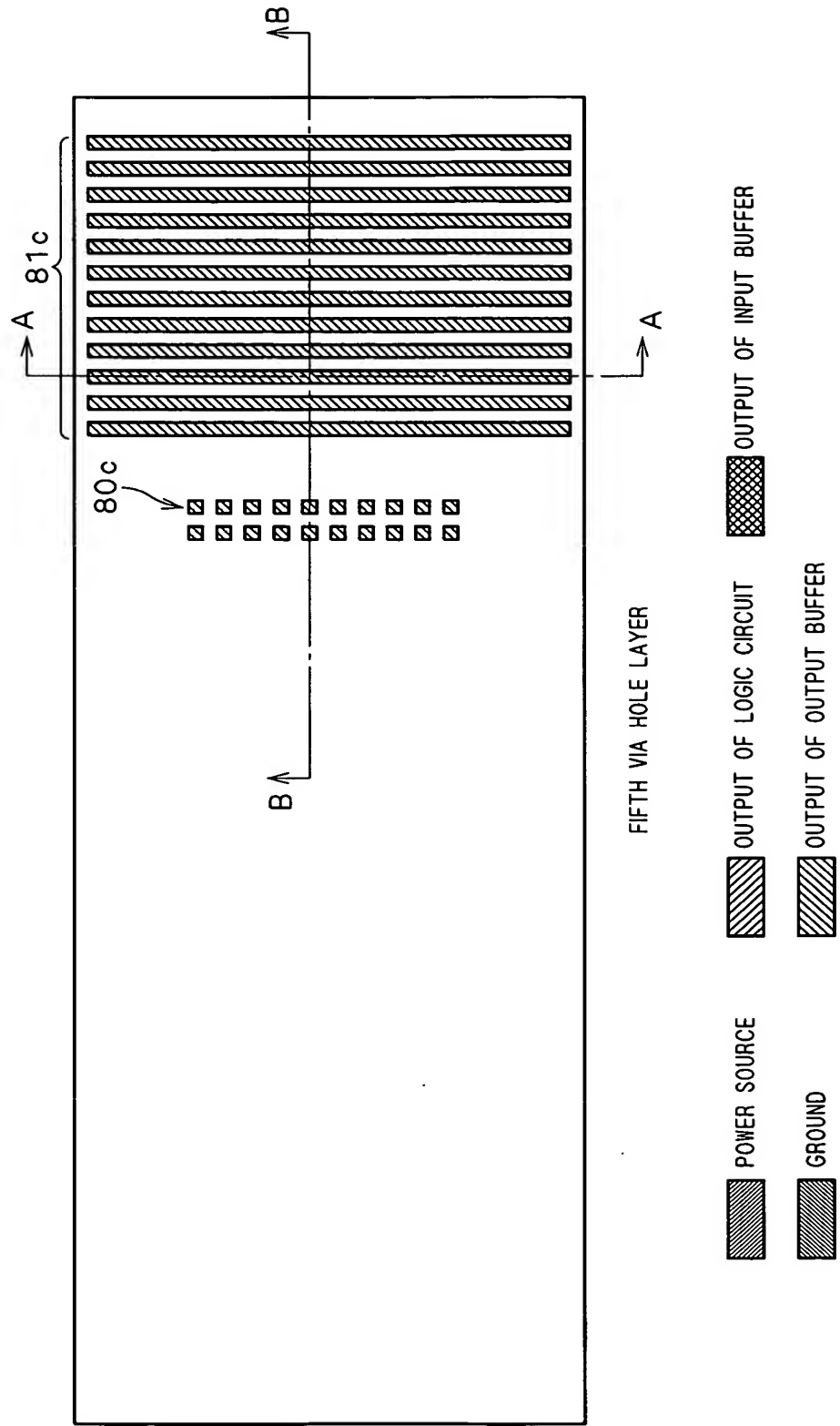




FIG. 43

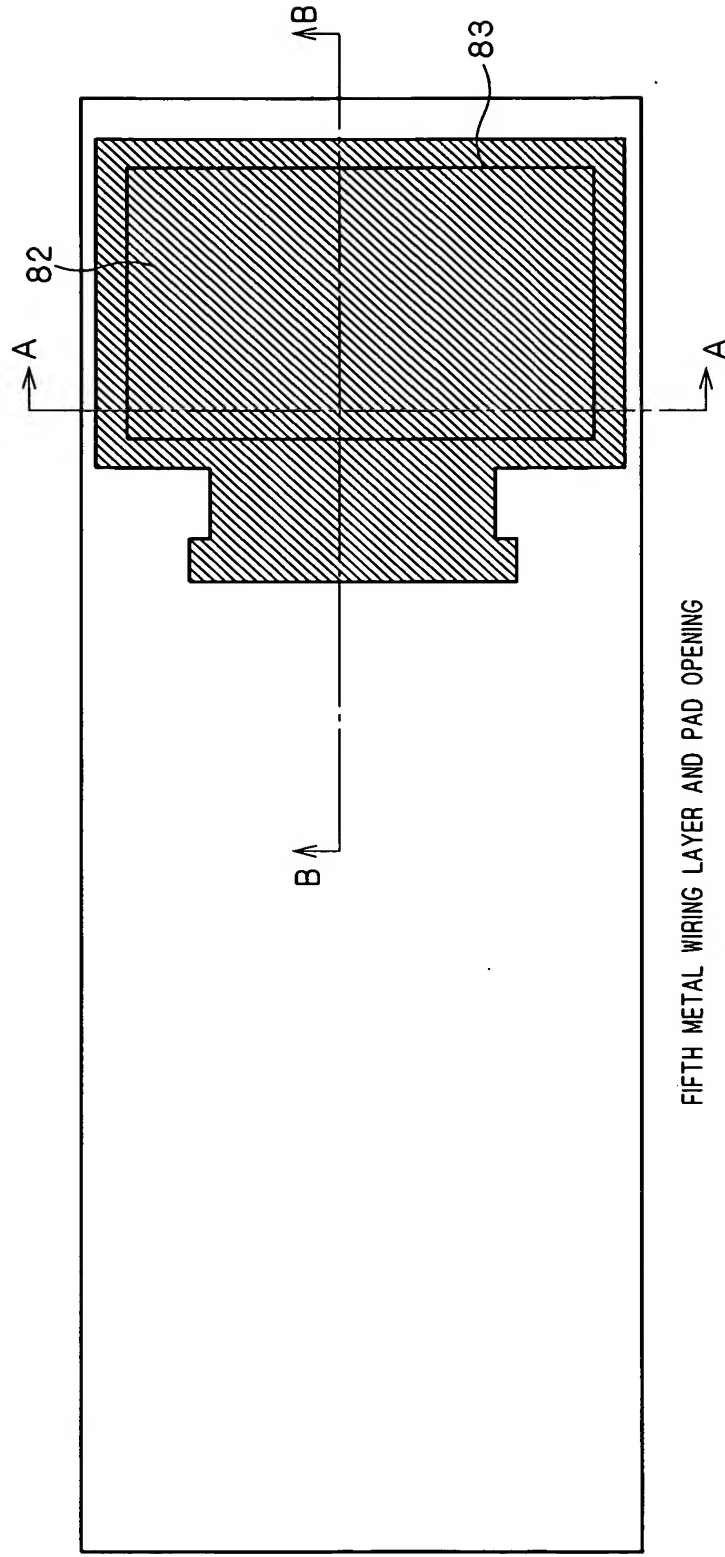


FIG. 44

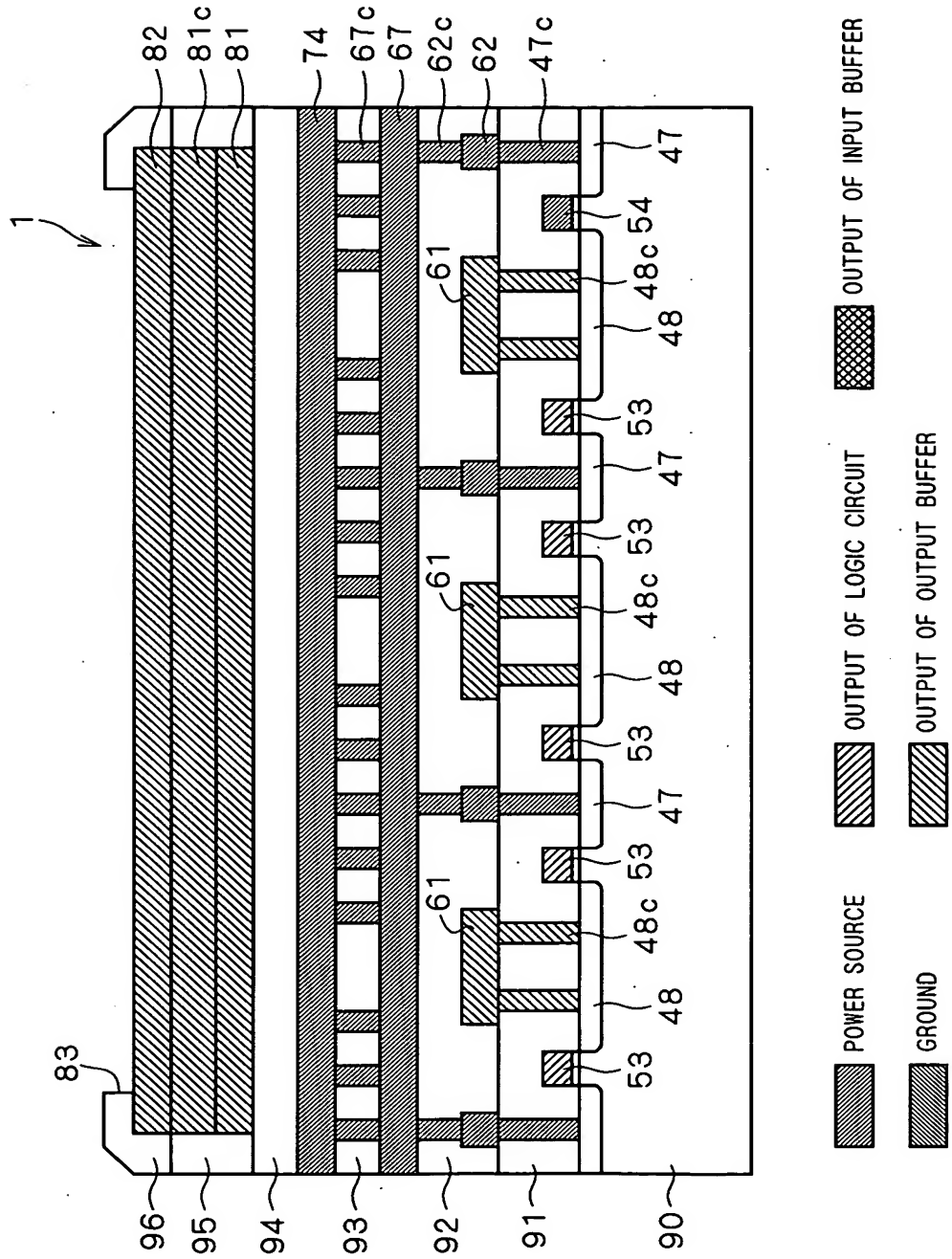
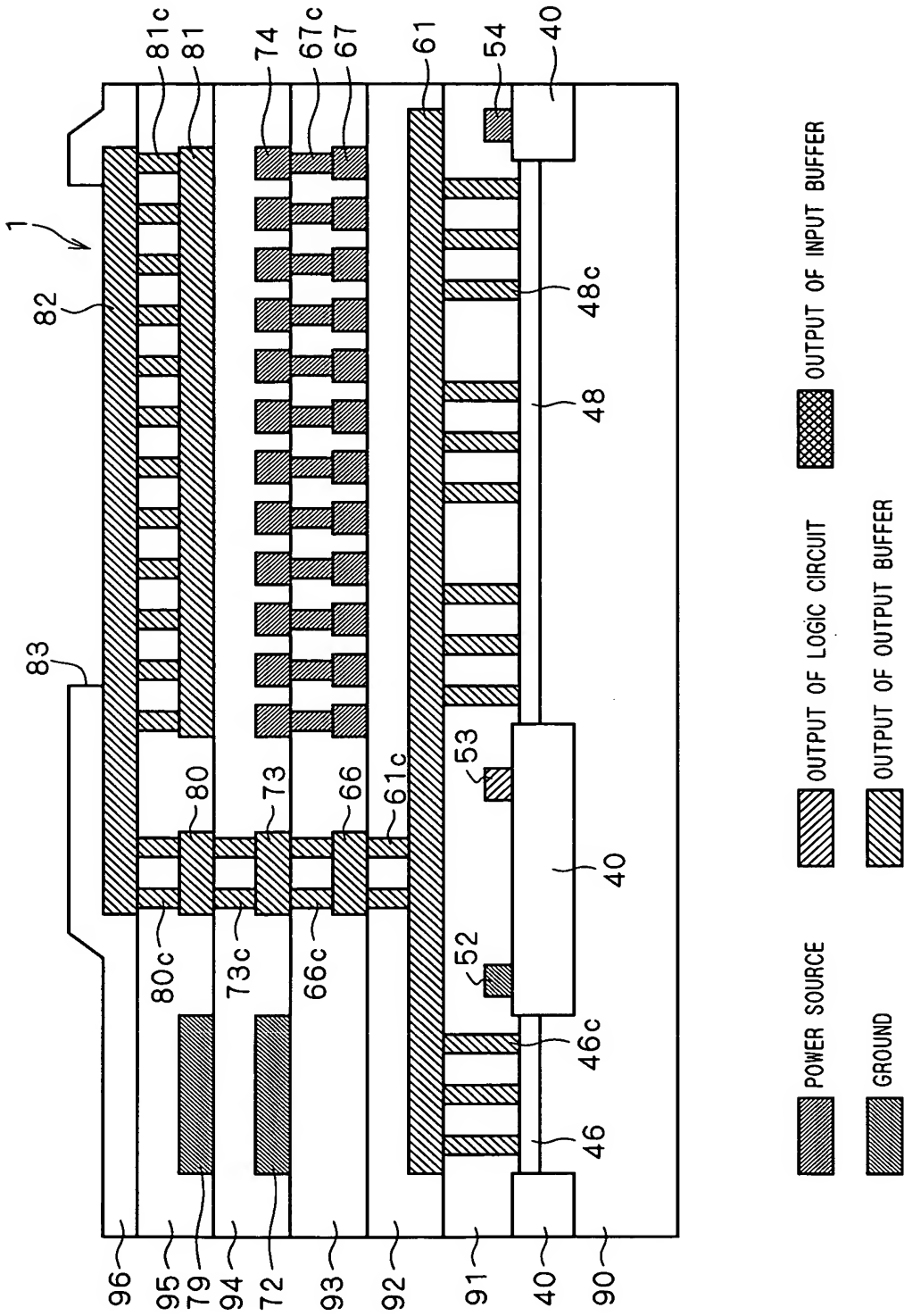
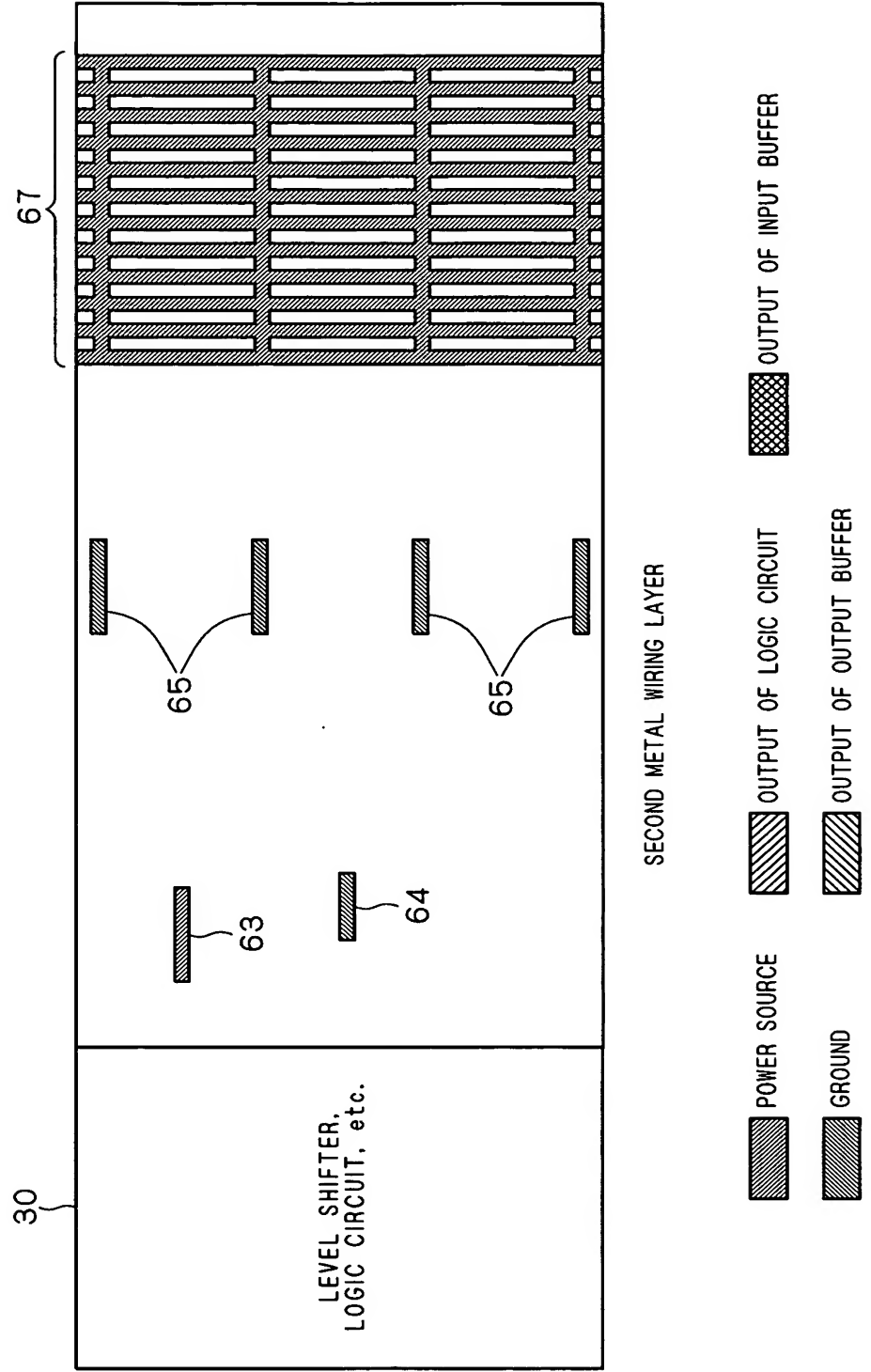


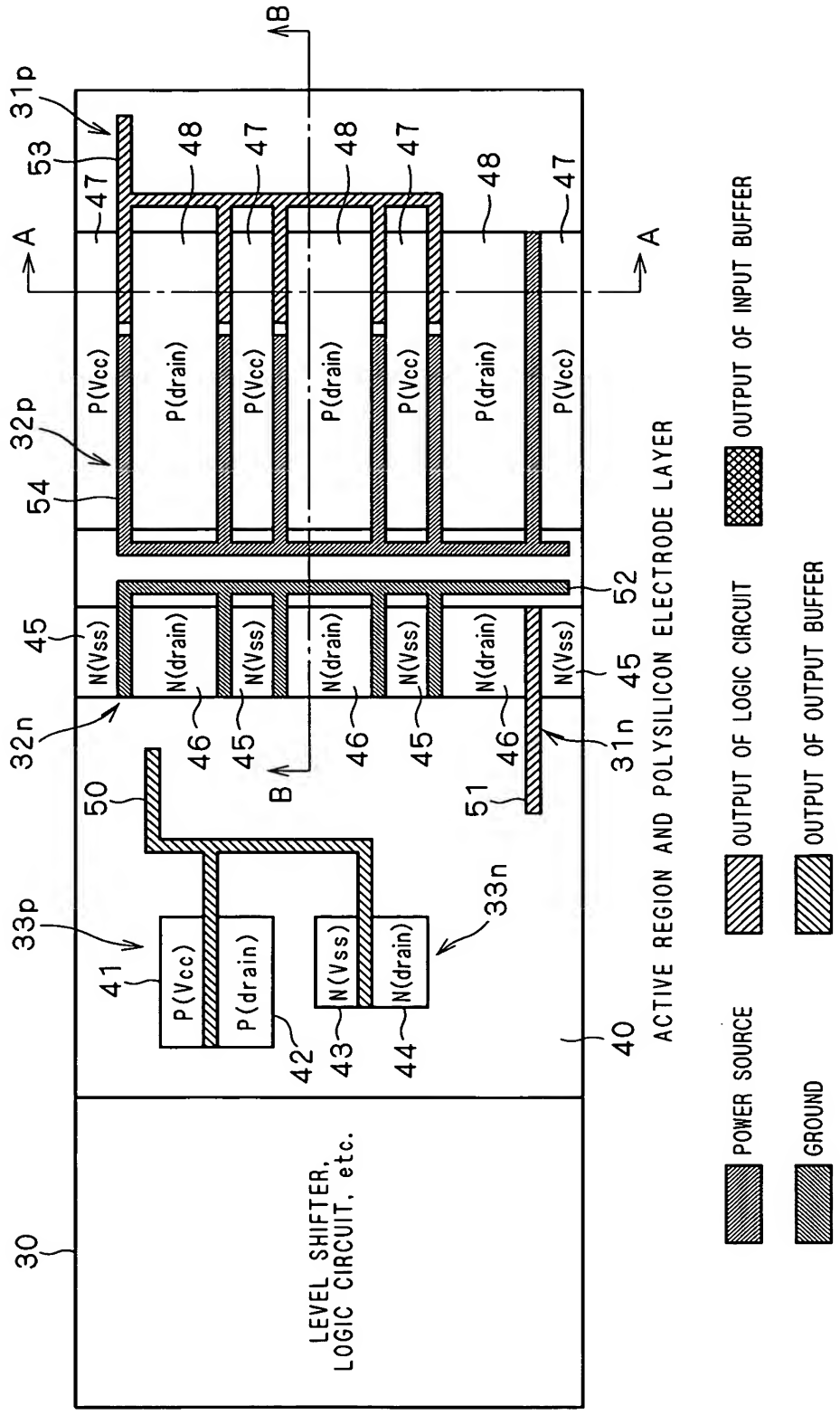
FIG. 45



F I G . 4 6



F I G . 4 7



F I G . 4 8

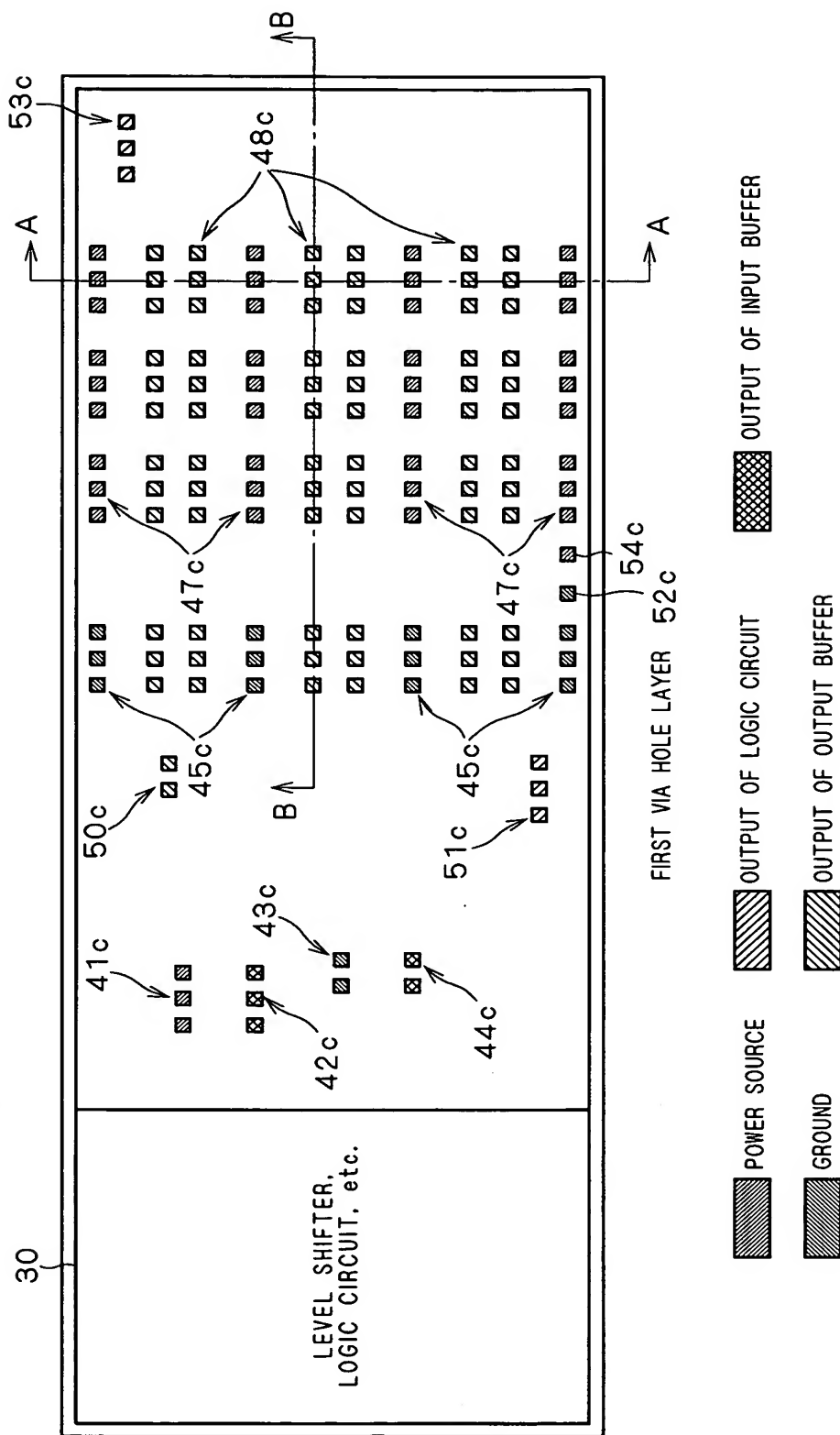


FIG. 49

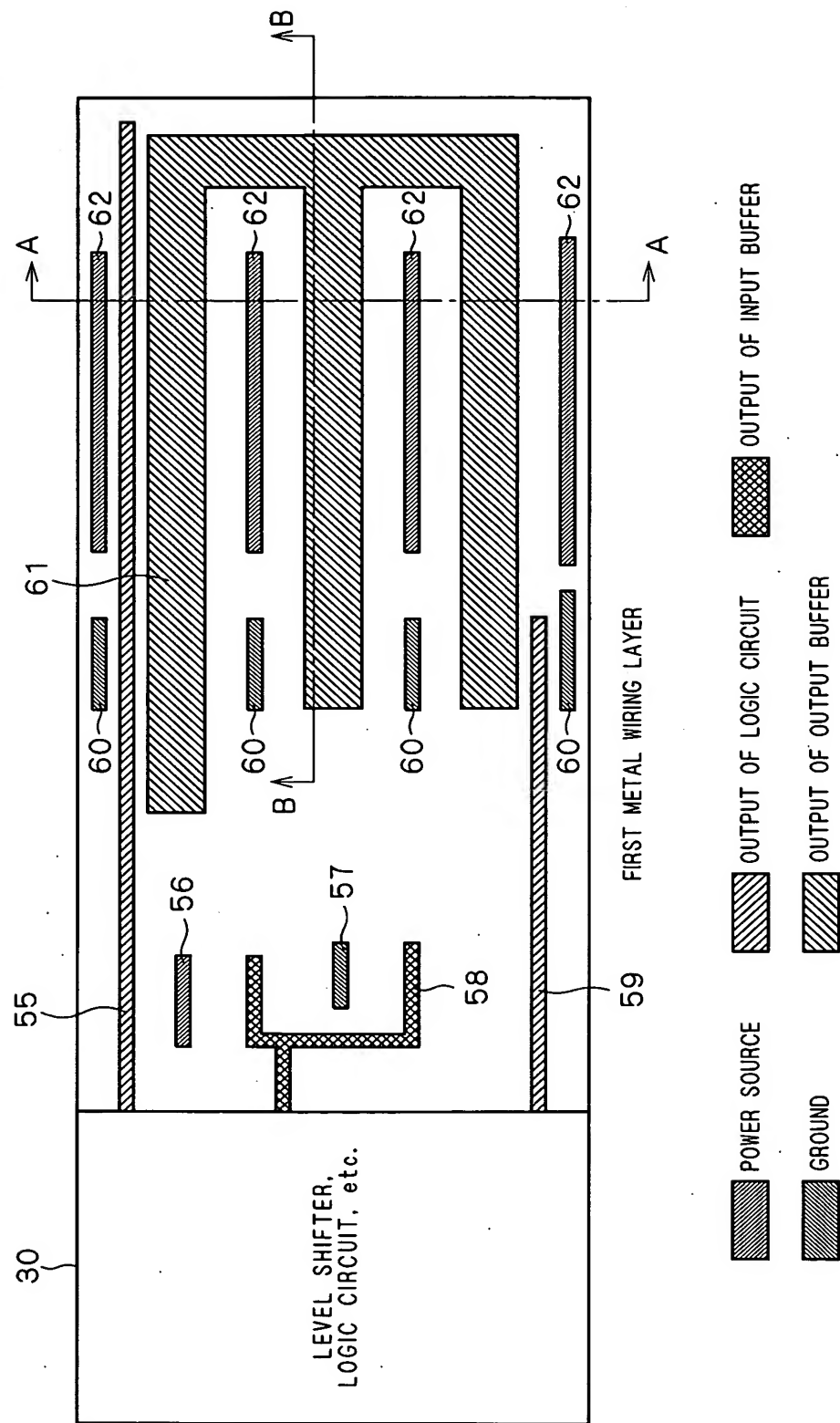
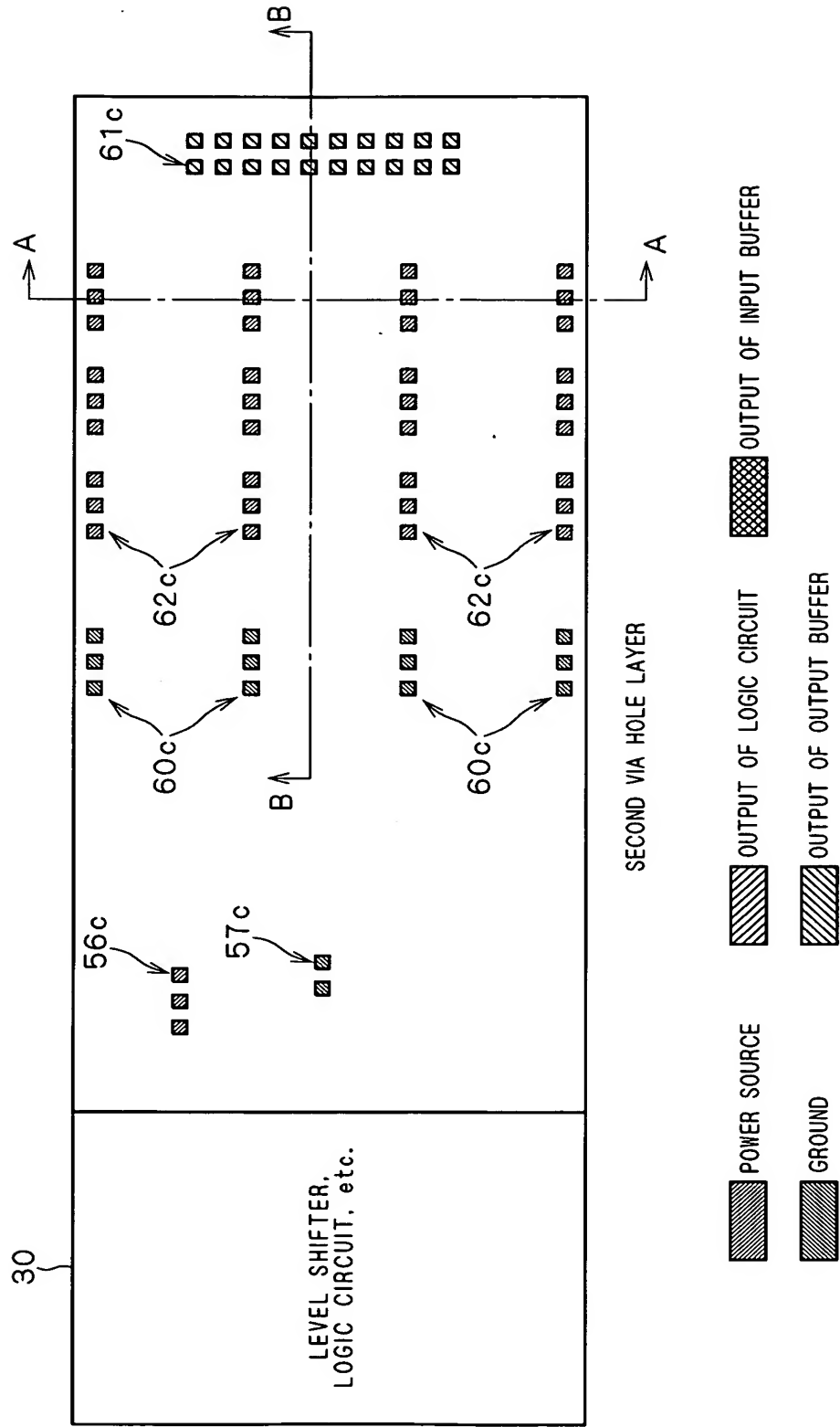


FIG. 50





F I G . 5 1

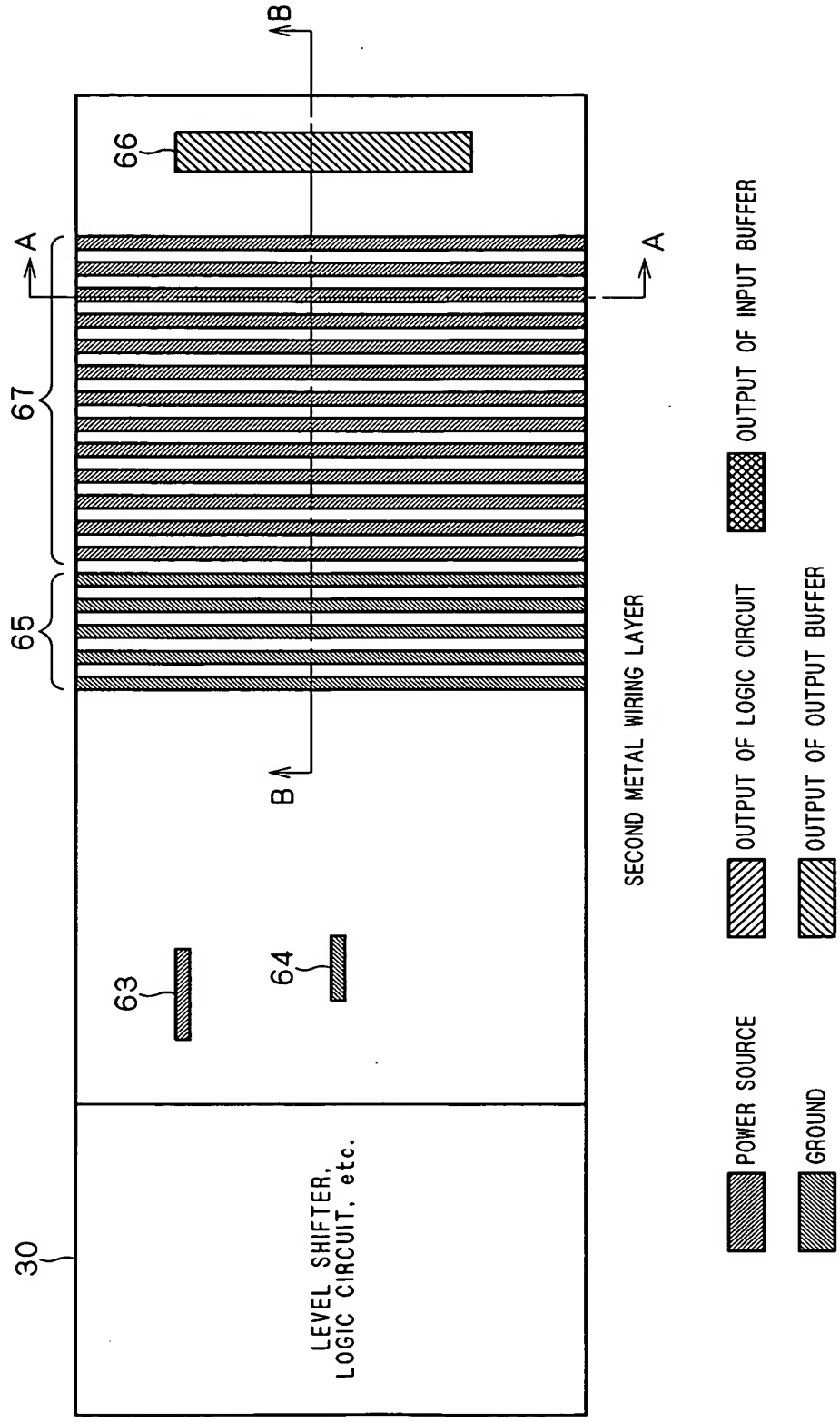


FIG. 52

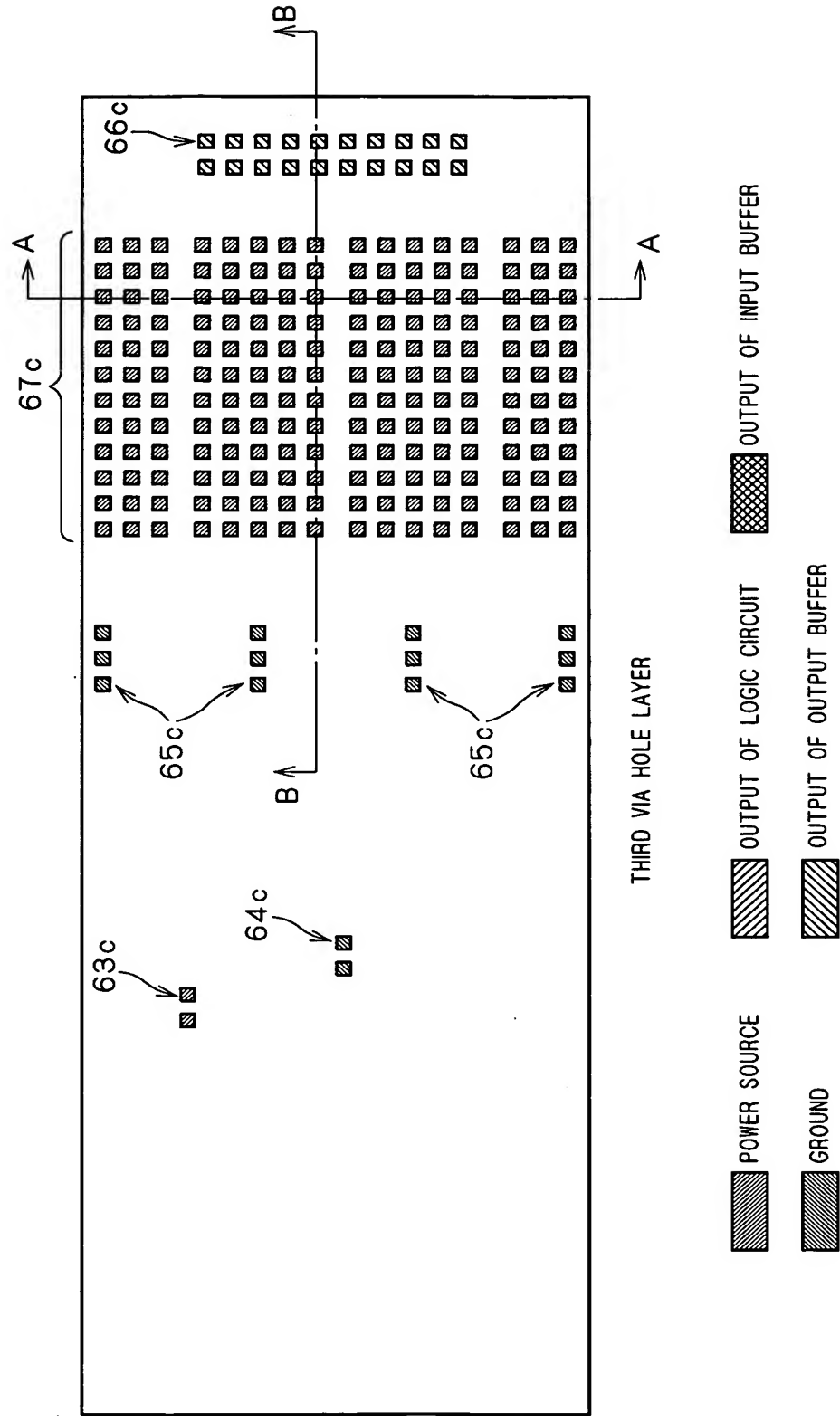


FIG. 53

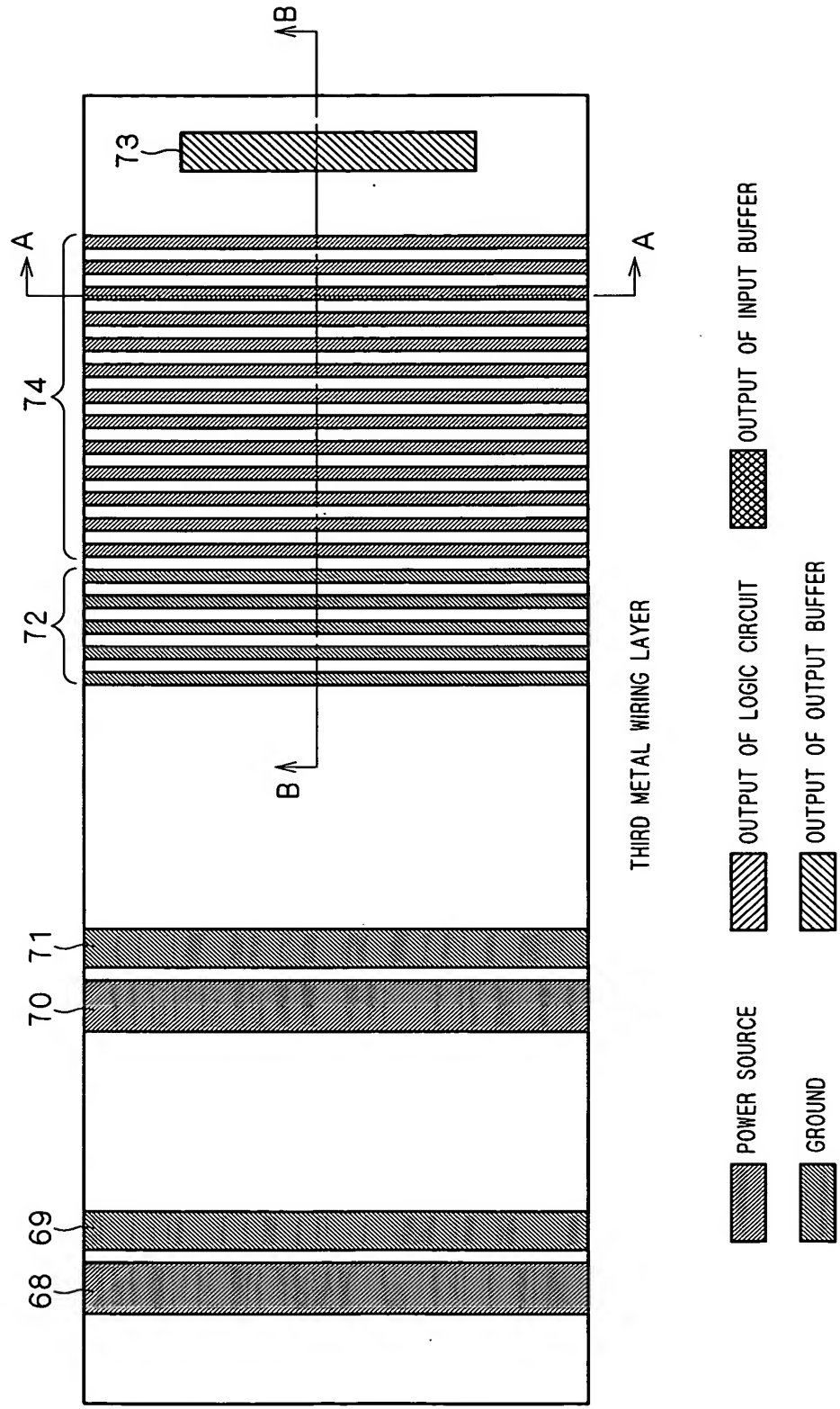


FIG. 54

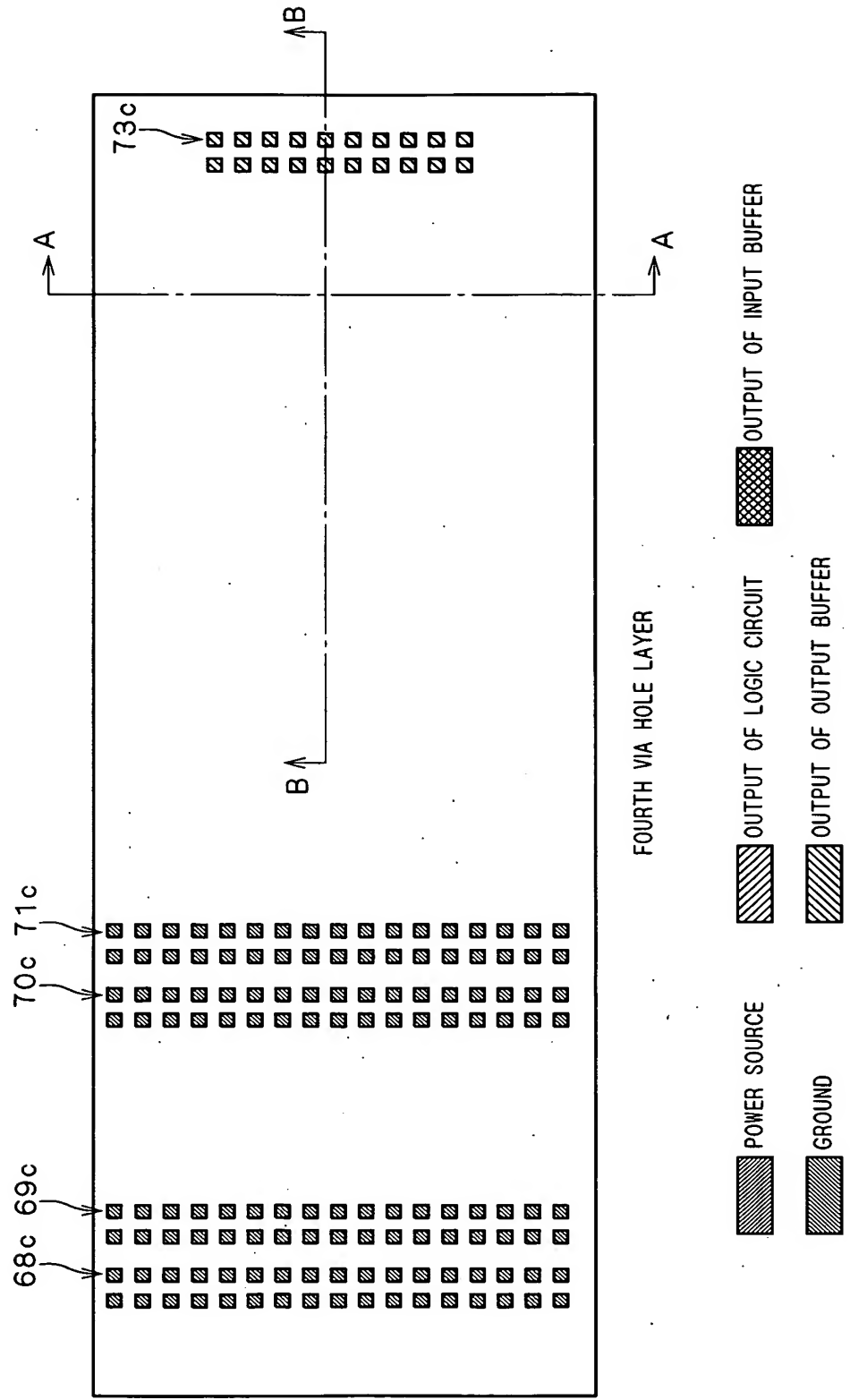


FIG. 55

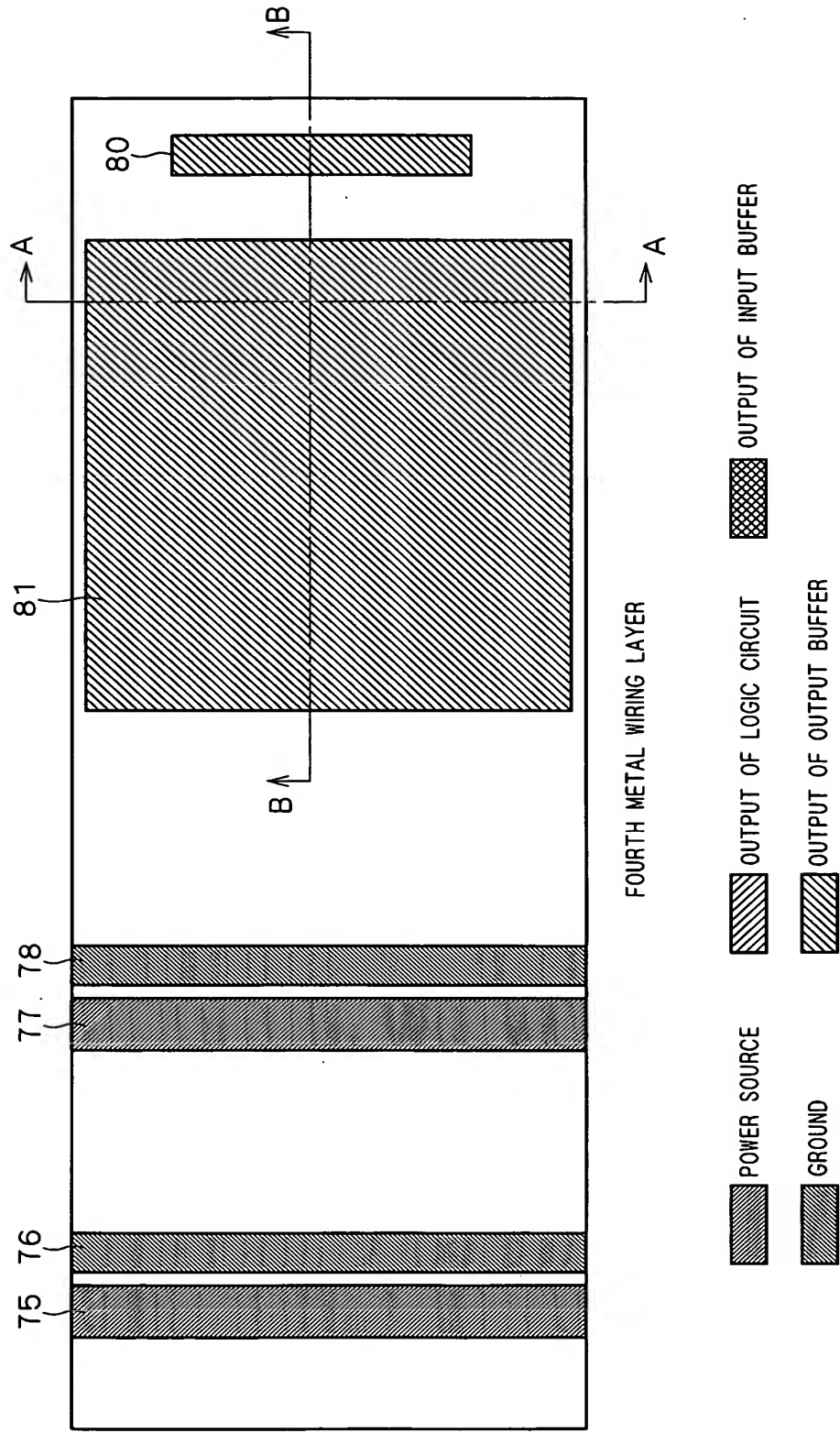


FIG. 56

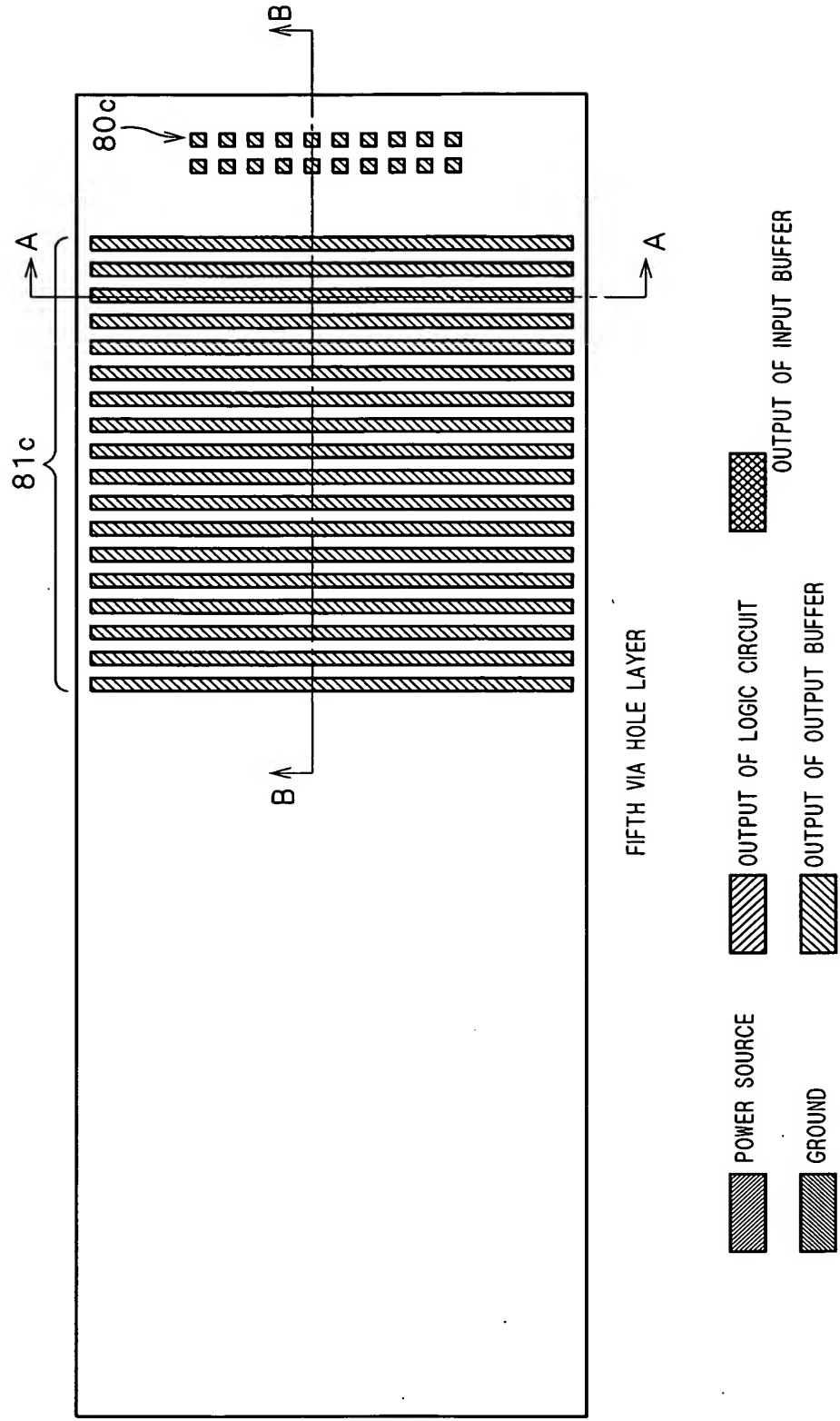


FIG. 57

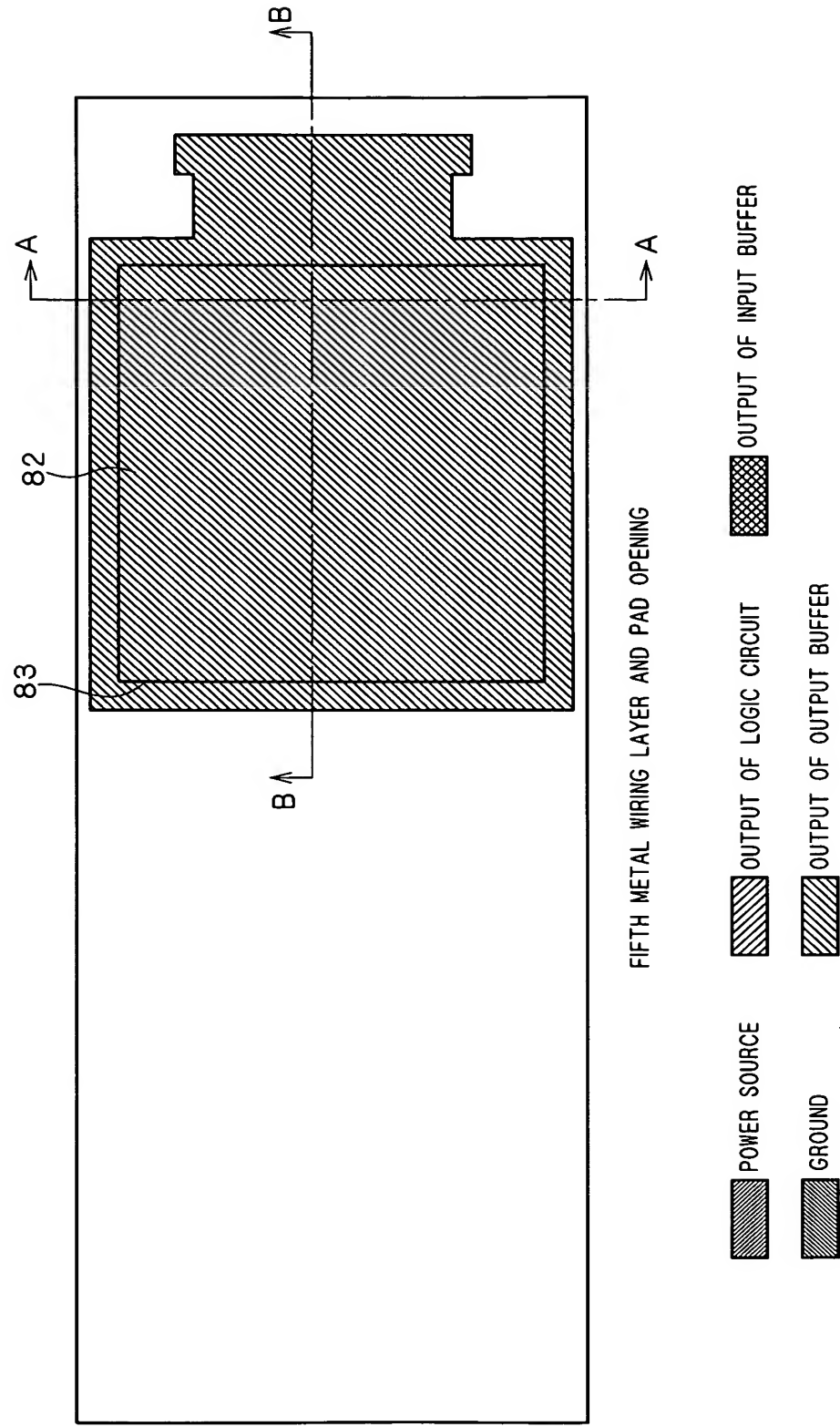


FIG. 58

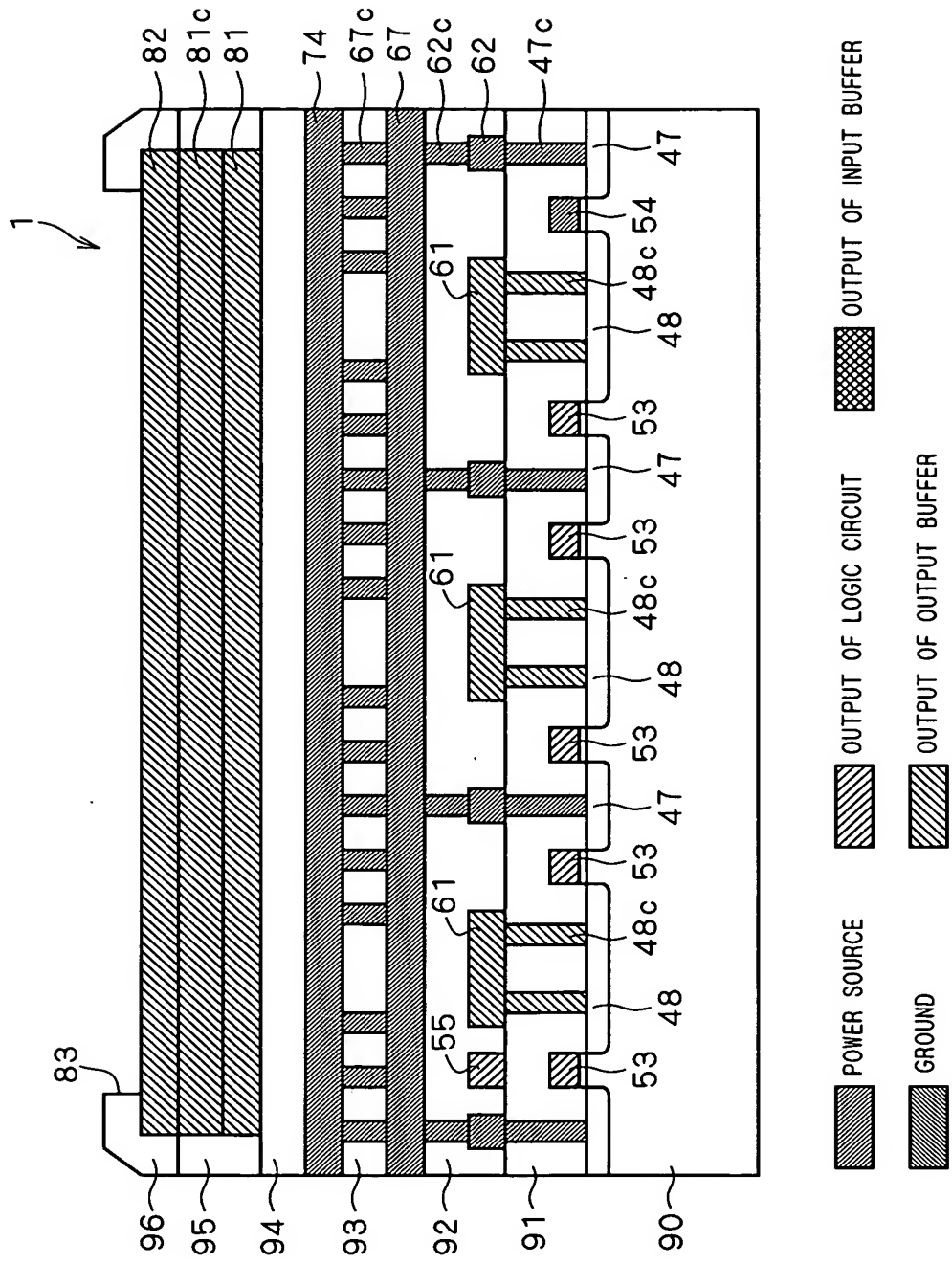




FIG. 59

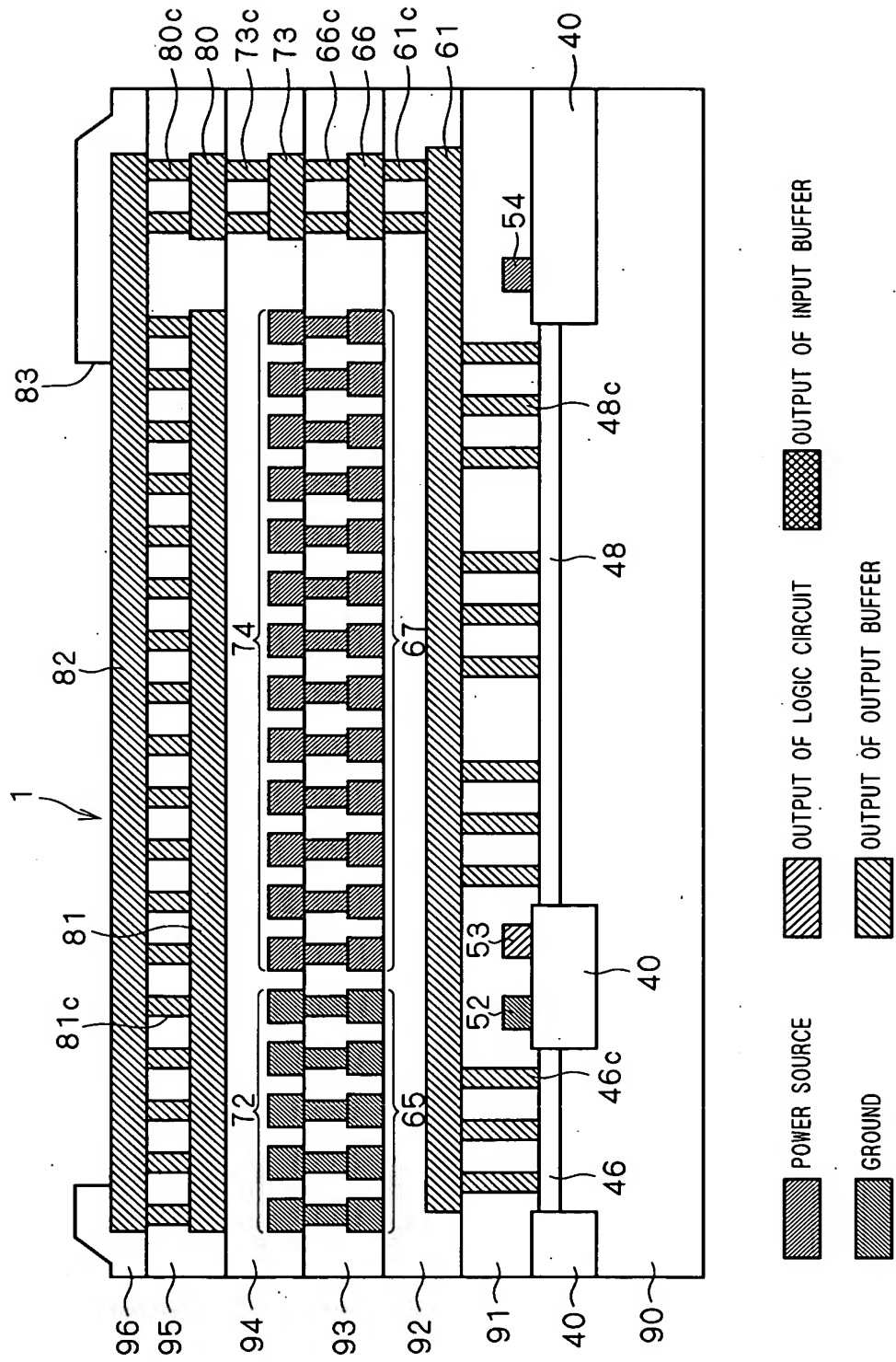


FIG. 60

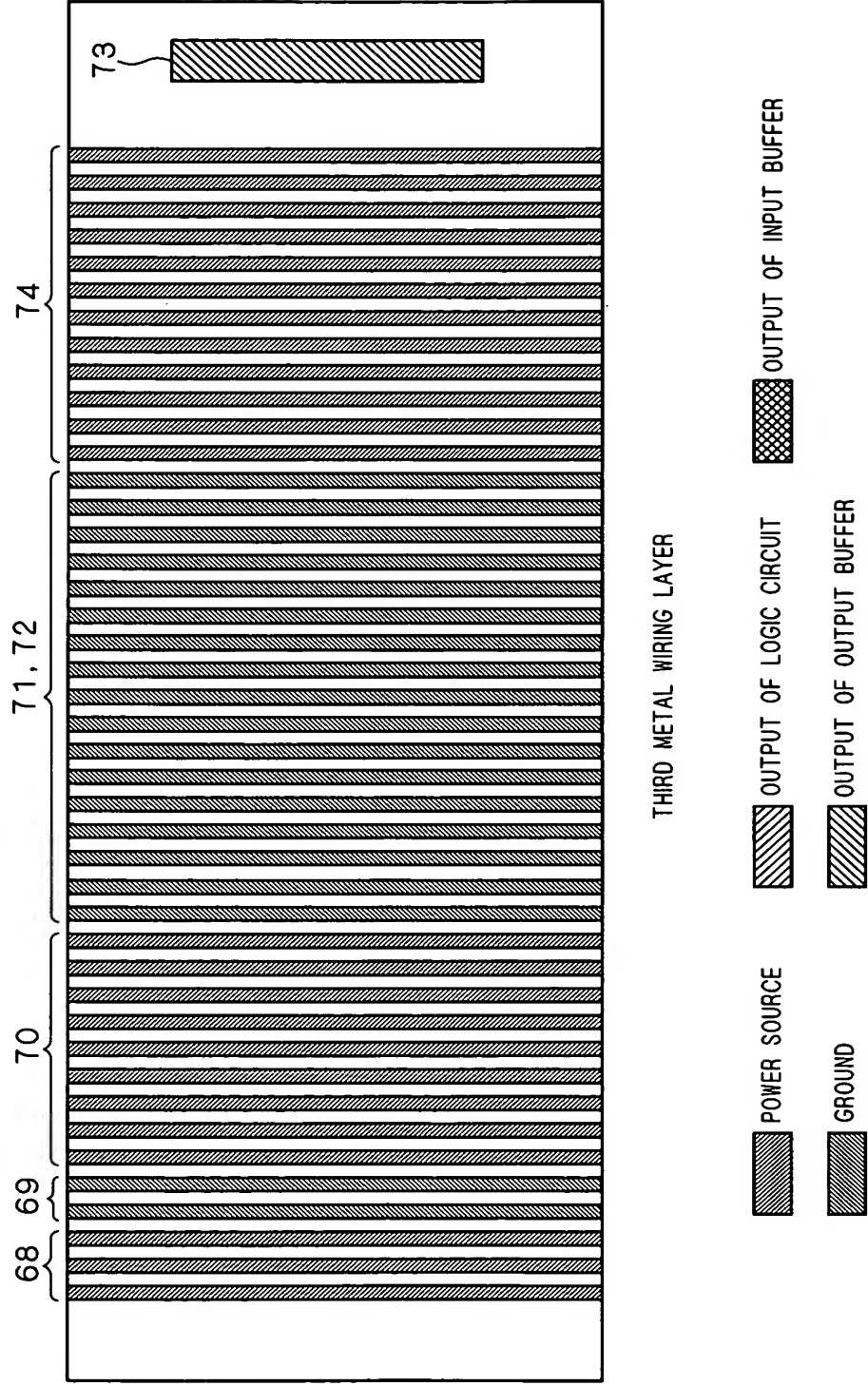


FIG. 61

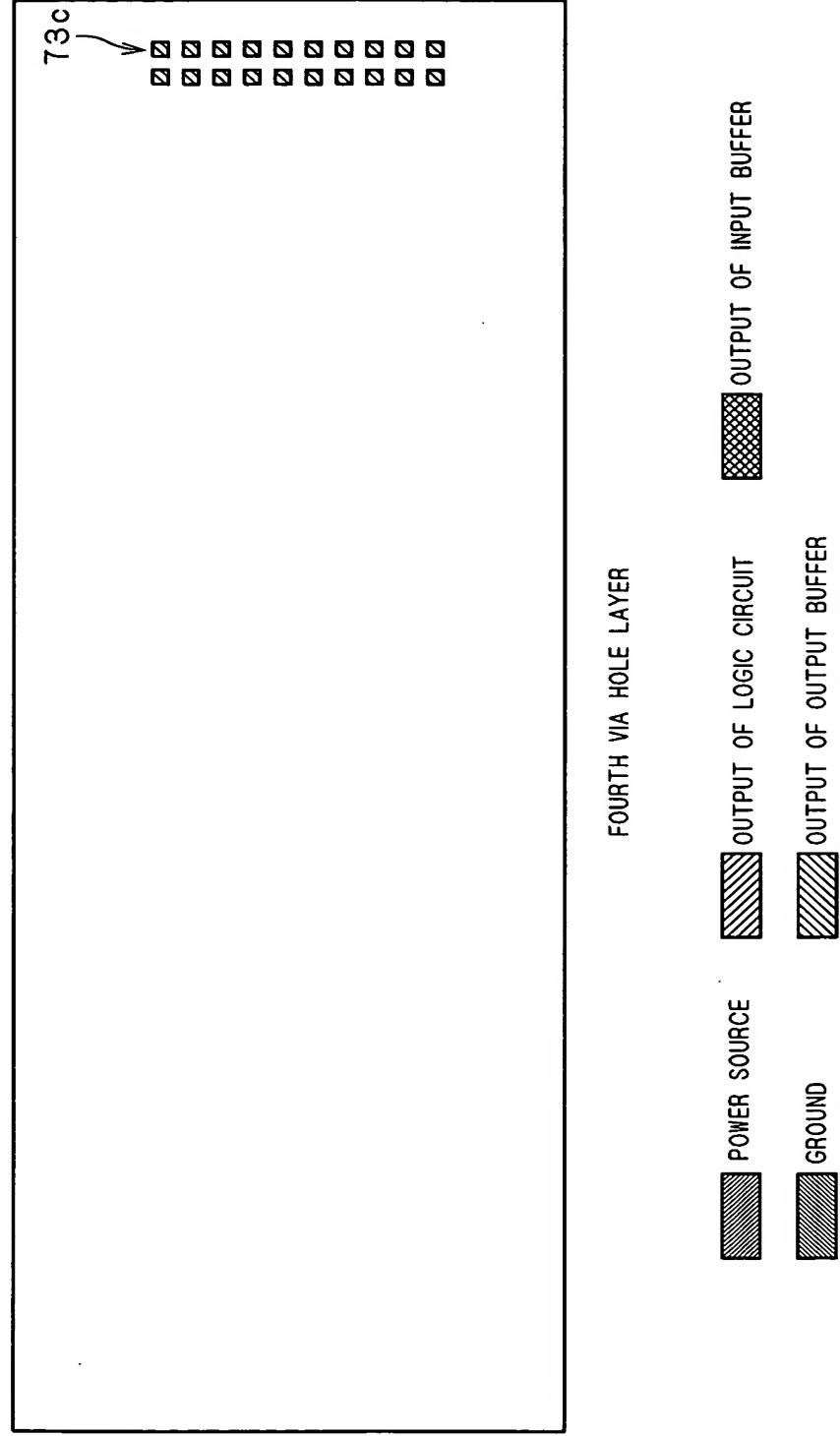
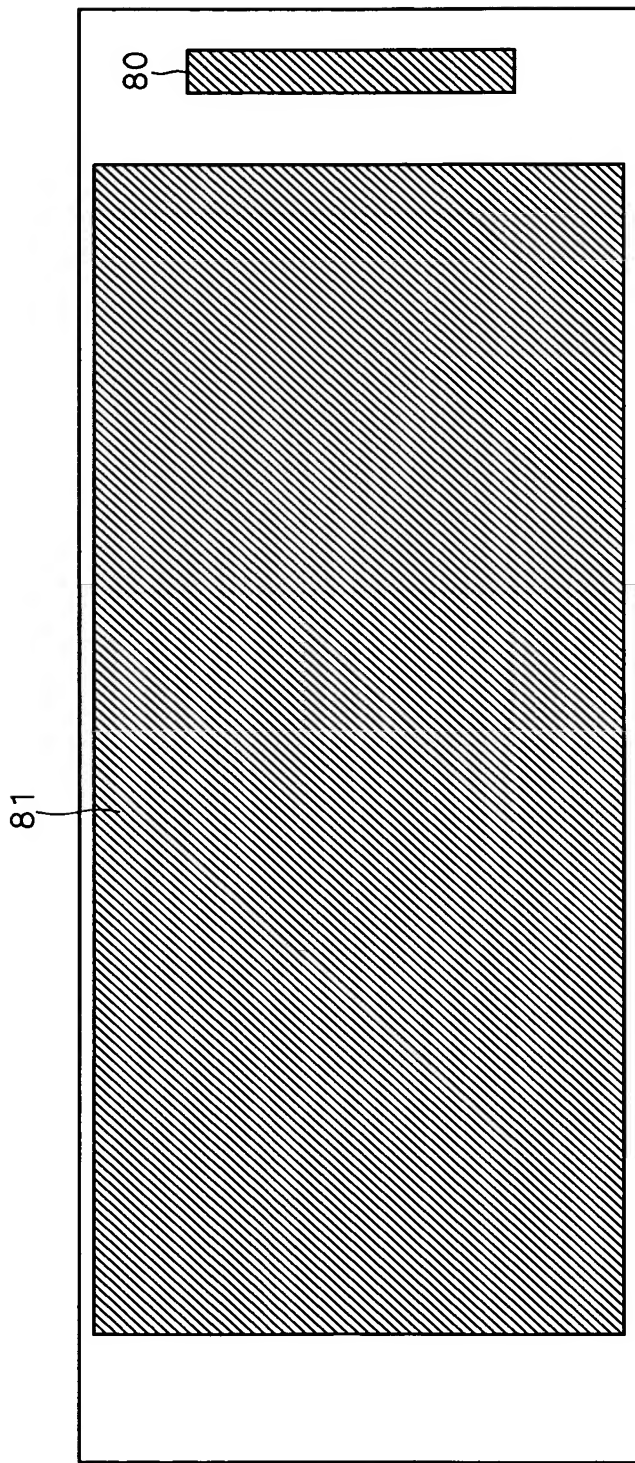
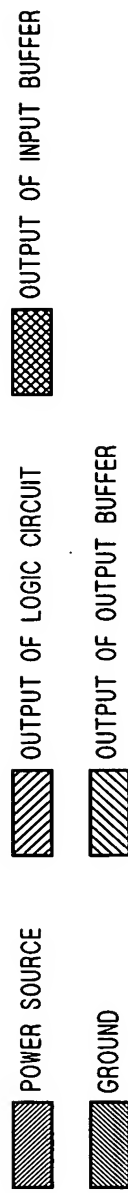


FIG. 62



FOURTH VIA HOLE LAYER



F I G . 6 3

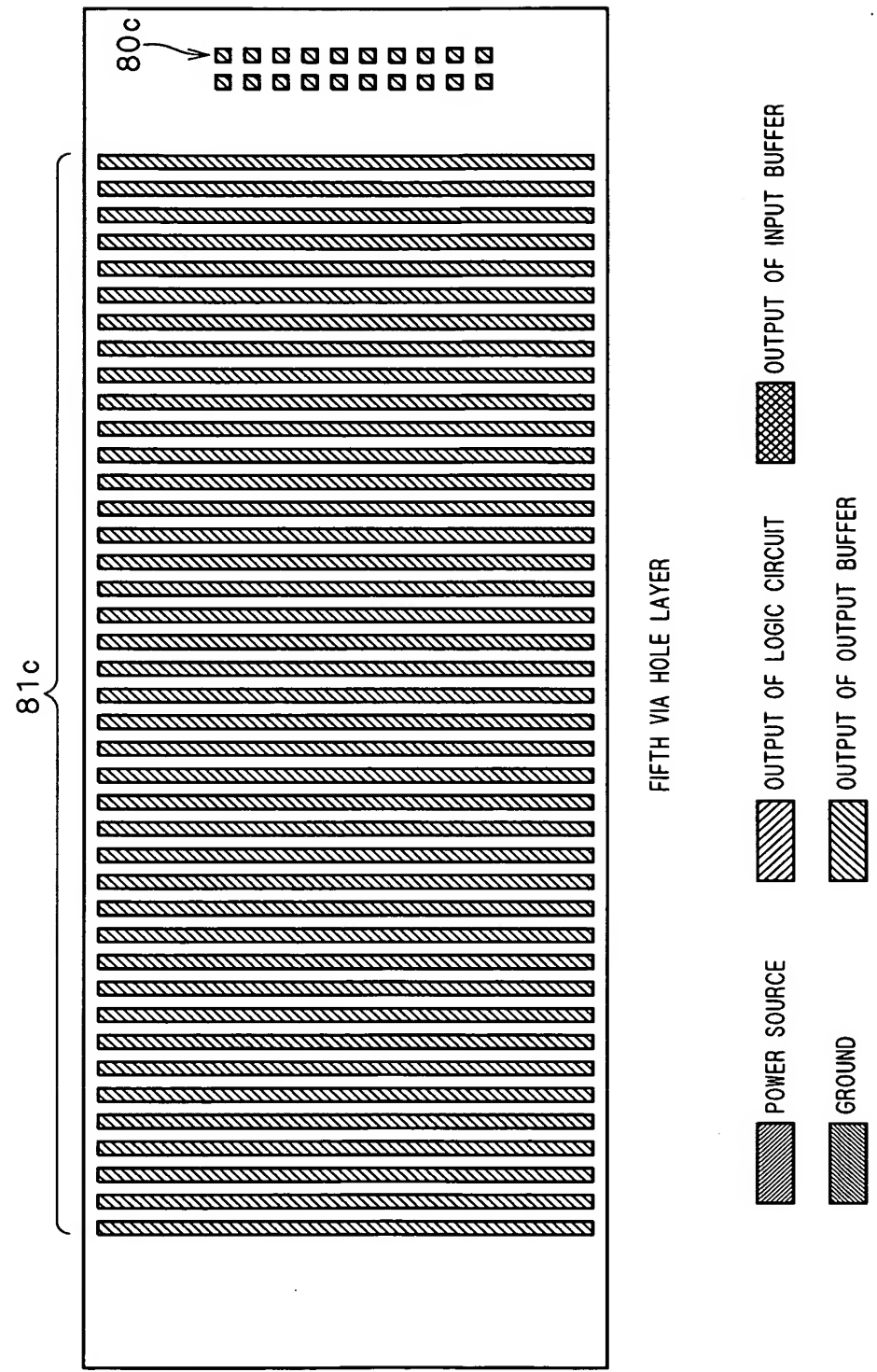
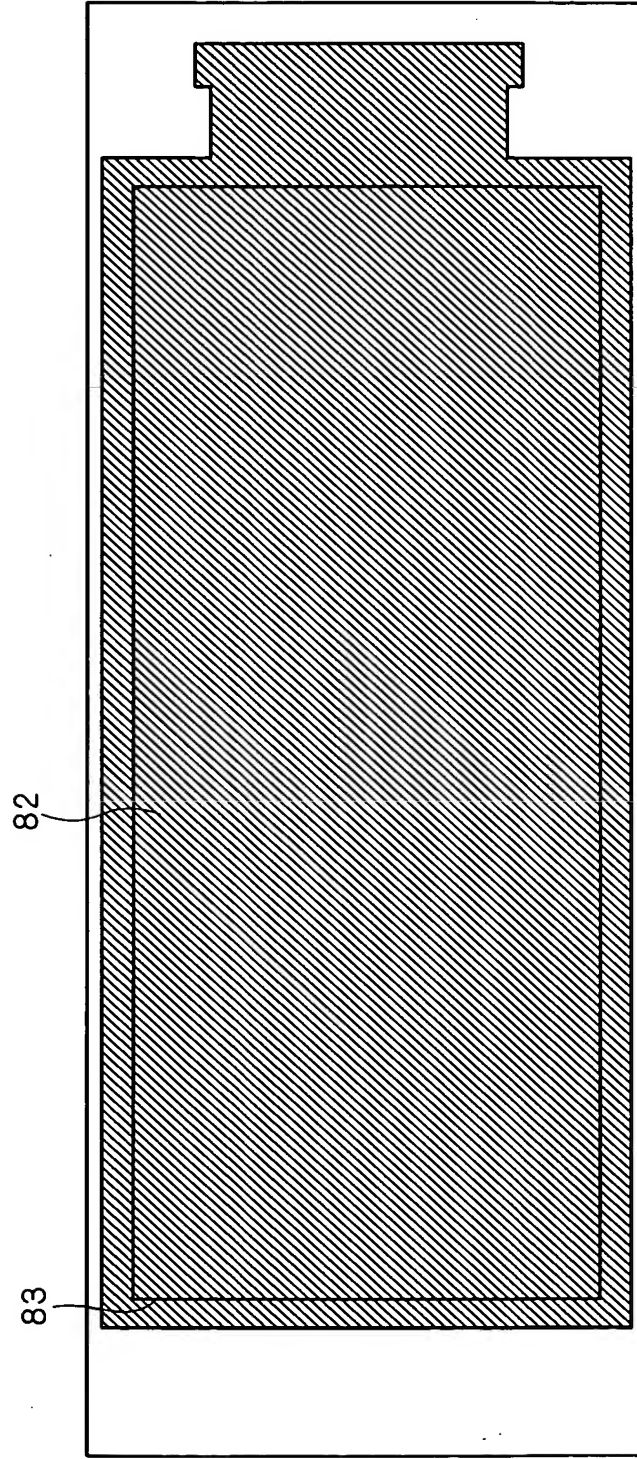


FIG. 64



FIFTH METAL WIRING LAYER AND PAD OPENING

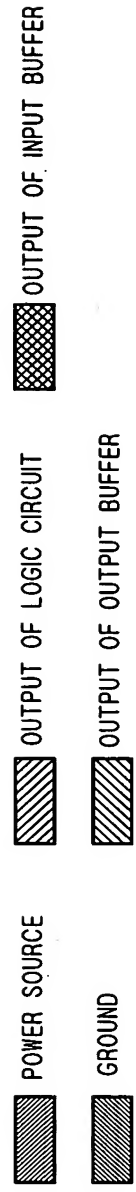
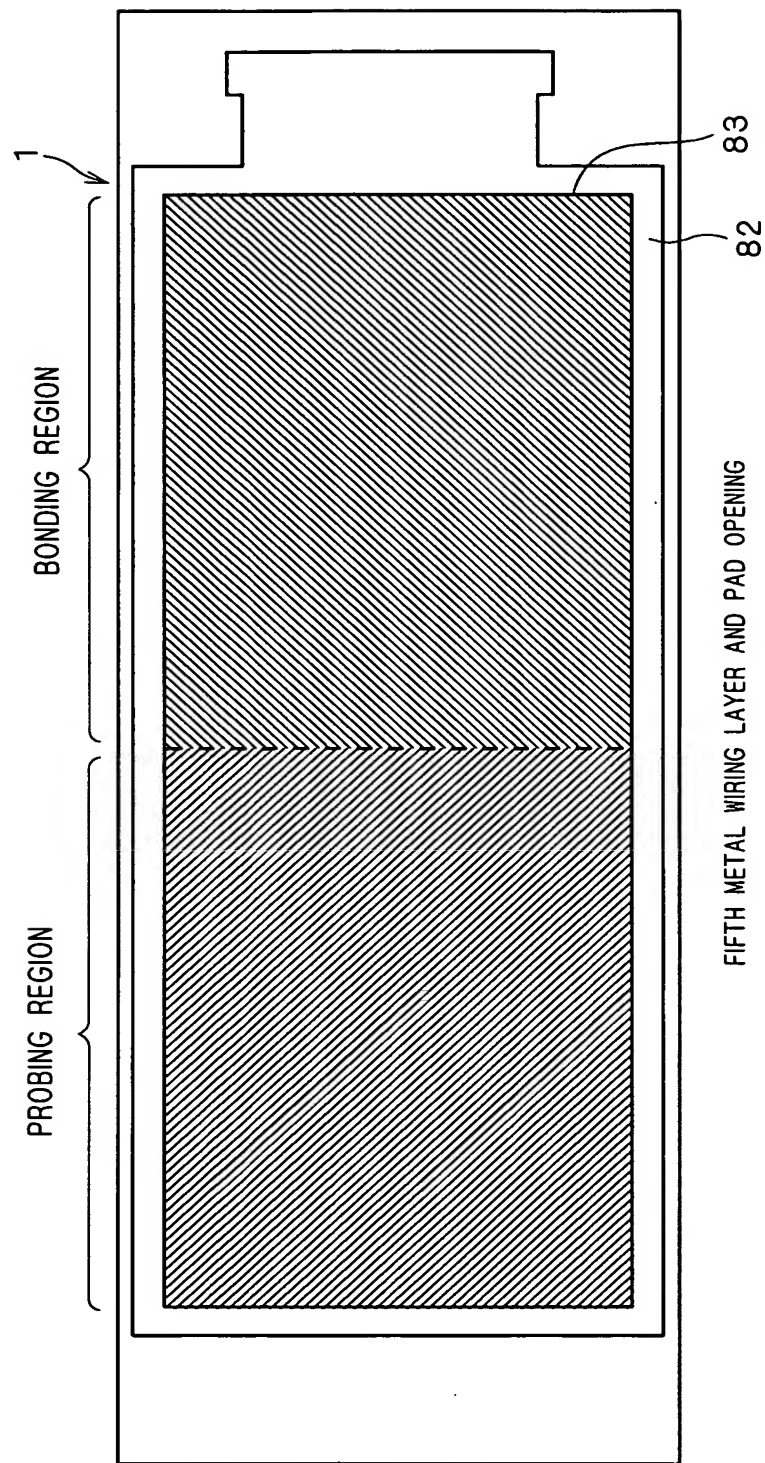
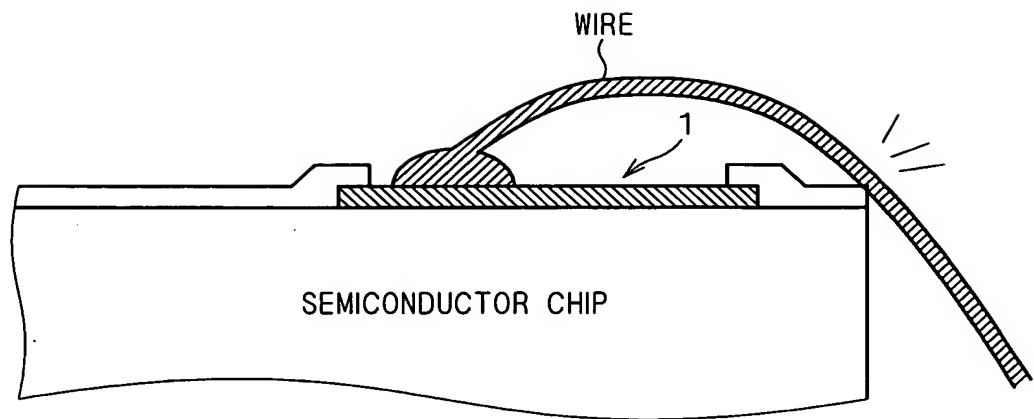


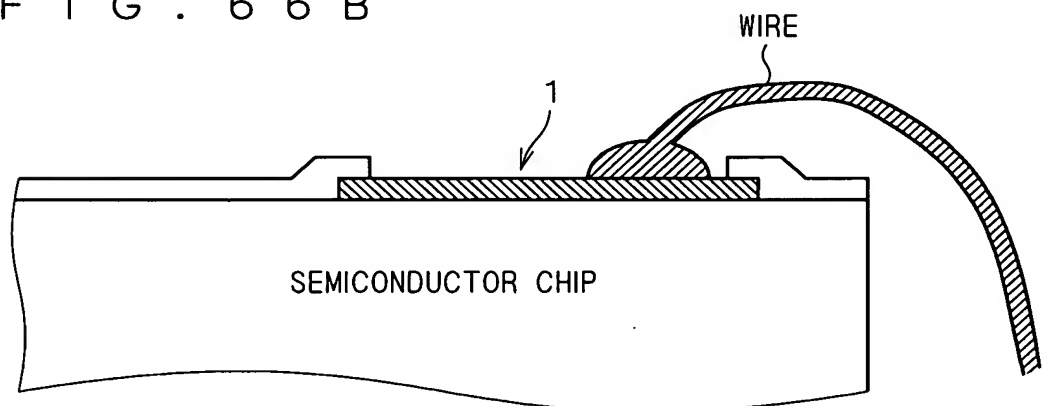
FIG. 65



F I G . 6 6 A



F I G . 6 6 B





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